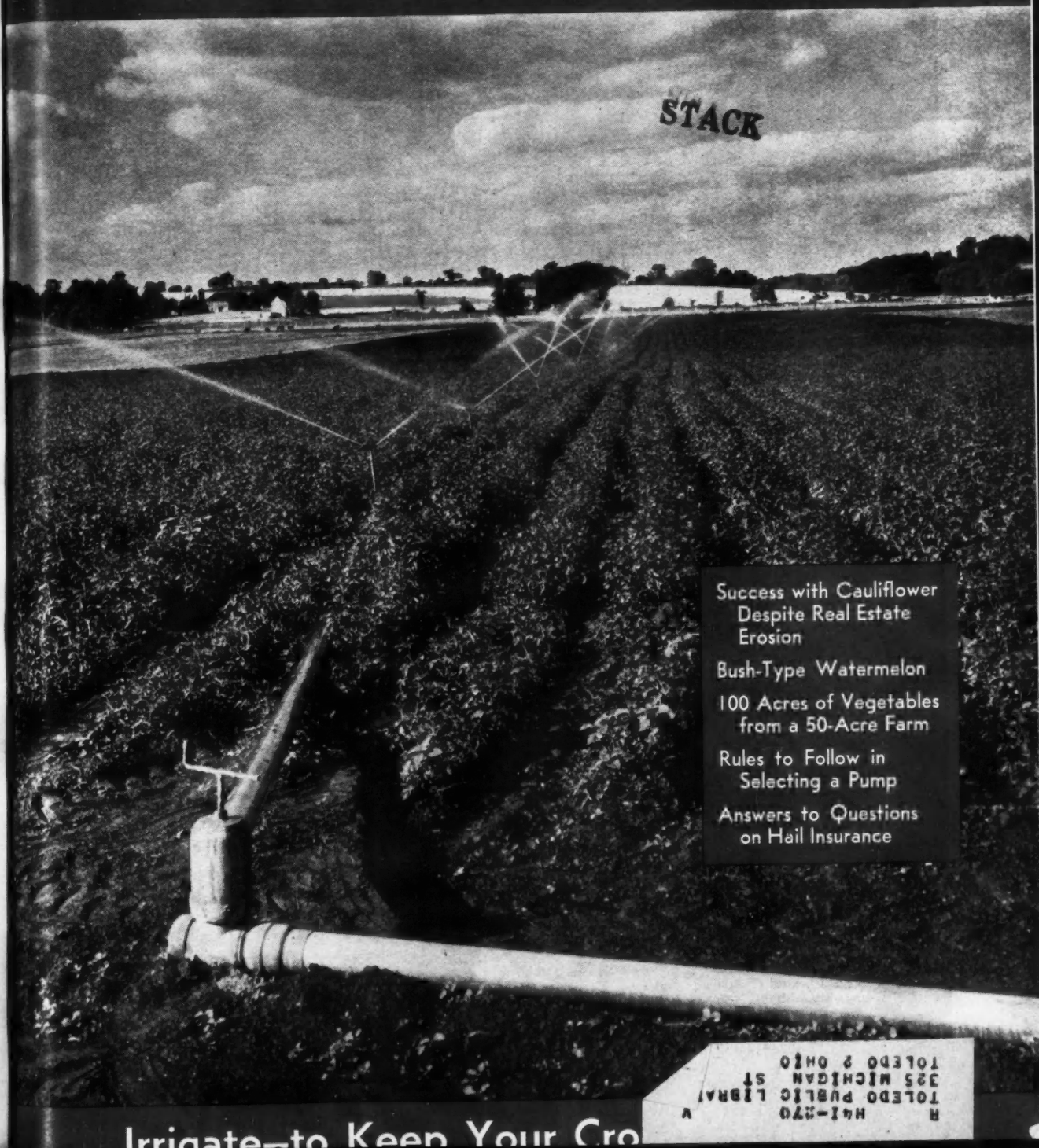
JUNE • 1958

American Vegetable Grower

and MARKET GROWERS JOURNAL



- Success with Cauliflower Despite Real Estate Erosion
- Bush-Type Watermelon
- 100 Acres of Vegetables from a 50-Acre Farm
- Rules to Follow in Selecting a Pump
- Answers to Questions on Hail Insurance

Irrigate—to Keep Your Cro

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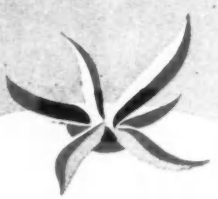
now approved for use on vegetables

DIAZINON

controls a variety of destructive insect pests

—can be applied close to time of harvest



tomatoes

GEIGY DIAZINON effectively controls Aphids, Dipterous Leafminers, Vinegar Flies.

CAN BE APPLIED UP TO 3 DAYS BEFORE PICKING

cabbage

GEIGY DIAZINON provides positive control of Aphids, Diamondback Moths, Imported Cabbage Worms.

CAN BE APPLIED UP TO 7 DAYS BEFORE HARVEST

broccoli and cauliflower

GEIGY DIAZINON gives excellent control of Aphids, Diamondback Moths, Imported Cabbage Worms.

CAN BE APPLIED UP TO 5 DAYS BEFORE HARVEST

RESIDUE TOLERANCES HAVE BEEN ESTABLISHED — vegetable growers can now use Geigy Diazinon for outstanding control of a variety of destructive insect pests on tomatoes, cabbage, cauliflower and broccoli.

This versatile phosphate insecticide is already used for control of potato insects, as well as for control of a wide variety of pests attacking apples, pears and cherries.

Diazinon not only gives positive results—even with difficult-to-control insects—but can be used closer to harvest. So, for effective, economical crop protection, ask your farm supply dealer for Geigy Diazinon 25E (25% emulsifiable solution) or Geigy Diazinon 25W (25% wettable powder. Follow label directions.

Diazinon is also recommended for multiple insect control on celery, lettuce, peppers, spinach and beets.

ORIGINATORS OF Geigy DDT INSECTICIDES

GEIGY AGRICULTURAL CHEMICALS
Division of Geigy Chemical Corporation
Saw Mill River Road, Ardsley, New York

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JUNE, 1958

"PUMP AND POWER MUST MATCH FOR ENGINEERED IRRIGATION"

says Shannon McCampbell, irrigation engineer and owner of Shannon McCampbell Company, Knoxville, Tennessee.

"With prices what they are these days, you've got to watch your production costs like a hawk. And using a 'Jim Crow Rig'—an old-fashioned pump and a misfit engine—can be an expensive mistake.

"Pump and engine must be *matched* for peak operating efficiency. Realizing this, Gorman-Rupp introduced a matched package unit in 1939. Since then, new developments and improvements have been tested on their engineers' own farms. No wonder they make the best irrigation pumps available.

"Take *this* Gorman-Rupp pump design for instance. Notice how the intake and discharge are horizontal, and low to the ground. Makes it easy to hook up your lines. Eliminates elbows that restrict water flow.

"Check valve problems have been licked with an automatic check valve that *seats out of the water flow.* And the shaft seal is kept under vacuum so that the seal is protected from water-borne abrasives. Gorman-Rupp was also first to supply an oversize fuel tank and safety switches so that pump and engine can operate for hours unattended.

"There are 50 Gorman-Rupp pump models. So when we go out to a prospect's farm, we can design an *engineered* system *exactly* to his requirements."

NOTE: *Why not see your Gorman-Rupp dealer today? Start cutting production costs—increase profits on your farm.*

THE GORMAN-RUPP COMPANY

305 Bowman Street, Mansfield, Ohio

Entered as second class matter at Post Office at Willoughby, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois

CARTER P.T.O. PUMPS

Here's the new pumping favorite in today's mobile irrigation techniques—Carter P.T.O. Pumps. Designed for power take-off drives, these Speed Increaser units go to work wherever tractors tow them . . . ready to develop pressures up to 115 PSI . . . capable of supplying 150 to 2000 gallons of irrigation water per minute.

These highly mobile centrifugal pressure pumps feature an integral speed increaser gear housing and rugged internal gearing system designed to withstand the heavy horse-power loadings of tractor take-off power. Extra-wide surfaced helical cut gears, immersed in oil, minimize friction and heat in working parts. No auxiliary water cooling is required . . . eliminating leakage problems . . . preventing dilution of lubricating oil . . . assuring full protection of all vital parts. The heavy duty telescopic drive shaft quickly connects to all standard tractor power take-off stubs . . . adjusts to tractor position on rough ground.

So, team up your tractor with the Carter P.T.O. Pump for a modern, versatile combination that's made-to-order for today's mobile irrigation requirements.

Write for Bulletin on Full Line of CARTER IRRIGATION PUMPS

Ralph B. Carter Company

210 ATLANTIC STREET, HACKENSACK, NEW JERSEY

Gentlemen:
Please send catalog on Carter Irrigation Pumps.

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Street _____

City _____ Zone ___ State _____

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American
Vegetable Grower

Reg. U.S. Pat. Off.
Commercial Vegetable Grower
Market Growers Journal

VOL. 6 No. 6

JUNE, 1958

Cover photograph by H. Armstrong Roberts. Success in irrigating depends on many factors. W. Bradford Johnson discusses these factors on page 11.

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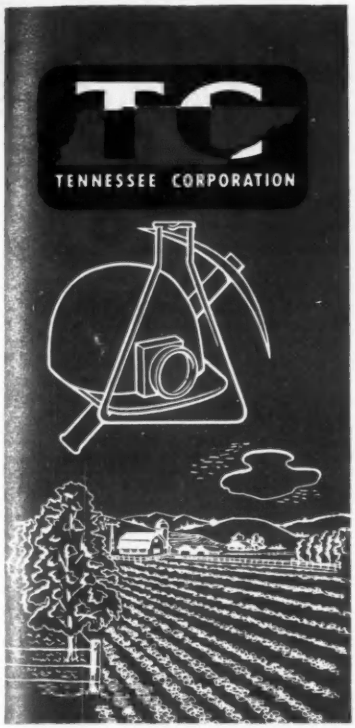


FUNGICIDES AND AGRICULTURAL CHEMICALS

There's a superior TC product to correct most nutritional deficiencies and TRI-BASIC COPPER SULFATE to prevent and control certain persistent fungus diseases.

CONTROL FUNGUS DISEASES

TRI-BASIC COPPER SULFATE

TENNESSEE TRI-BASIC COPPER SULFATE

A chemically stable copper fungicide containing not less than 53% metallic copper. . . . For spraying or dusting truck and citrus crops. Especially effective in controlling persistent fungus diseases. Prevent fungus diseases through application of Tri-Basic Copper Sulfate before fungus attacks.

COP-O-ZINK (A Neutral Copper-Zinc Fungicide)

COP-O-ZINK TC NEUTRAL COPPER ZINC

For disease control and prevention. Particularly effective on potatoes. Also on many vegetable crops. Cop-O-Zink is excellent for correcting Copper and Zinc deficiencies and for stimulating plant growth. Contains 48% Copper and 4% Zinc. Applied to foliage in spray or dust form.

CORRECT NUTRITIONAL DEFICIENCIES

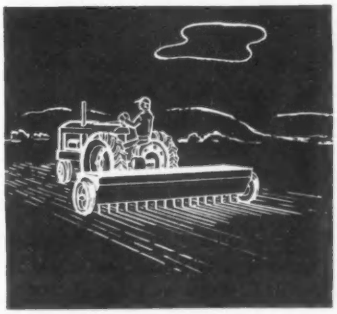
NU-IRON *(Nutritional Iron)*
A neutral Iron Compound containing 30% Iron as Metallic. Chelated Iron 10% as metallic—applied to foliage of plants for correction of Iron deficiencies.

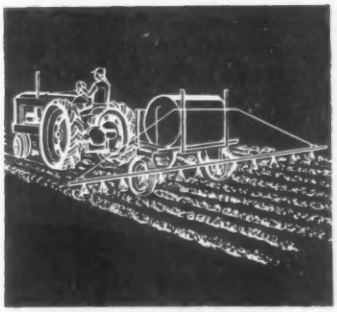
NU-Z *(Nutritional Zinc)*
Nu-Z contains 52% metallic zinc. . . . Can be applied directly to the plant in spray or dust form. . . . Stimulates plant growth and corrects zinc deficiencies.

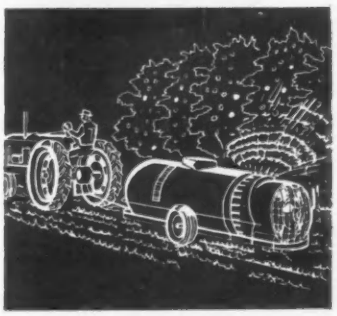
NU-MANESE *(Manganous Oxide)*
An extremely effective nutritional manganese product for correcting manganese deficiencies due to low manganese content of the soil. . . . Applied directly to soil, in mixed fertilizer or in spray or dust form.

NU-M *(Nutritional Manganese)*
A nutritional manganese compound to be fed to the plants through direct application in spray or dust form . . . To correct manganese deficiencies and to stimulate healthier plant growth.

ES-MIN-EL
WE WILL CUSTOM MIX MINERAL MIXTURES TO YOUR OWN SPECIFICATIONS IN LARGE OR SMALL QUANTITIES
The **ES**sential **MIN**eral **EL**ements . . . Contains Manganese, Copper, Iron, Zinc, Boron and Magnesium, all essential to healthy, productive soil. Fruits and vegetables rich in vitamins cannot grow in soil poor in minerals. For soil application. Es-Min-El in spray or dust form for direct application to the plants is also available. . . . Contains nutritional manganese, Zinc and Copper.







TC DUST MIXTURES

Tennessee's Nu-Z, Nu-Iron, Nu-M and Tri-Basic Copper Sulfate are especially suited for use in preparing nutritional and fungicidal spray and dust mixtures.

For Information on These Nutritional Products, Write, Wire or Phone Us.

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

Larry Robinson

Ward Robinson

Lawrence R. Robinson

An American Heritage Improves Your Vineseed Crops

Almost a century of pioneering research conducted by three successive generations of one family has made possible the production of highly specialized vineseeds. Yet, this agricultural triumph is now taken for granted by thousands of distributors, dealers and farmers throughout the world.

The product: Robinson Specialized Vineseeds. Cucumber, squash, watermelon, pumpkin and cantaloupe bred year in and year out for exceptionally healthy, vigorous stands.

The family: James C. Robinson who took the covered wagon trail westward from New York state in the 1800's and founded the company; Lawrence Robinson, Sr. whose courage, initiative and integrity expanded the company and consistently raised the quality of its products and the ethics of its operation; and Lawrence Robinson, Jr. and Ward Robinson who, with their father, continue the fine standards and traditions which have made this firm America's First Name in quality vineseeds.

Robinson vineseeds have, through years of experimentation, developed strains to meet the specific soil and climate requirements of your area in profitable crops. They represent assured high quality yields and robust, attractive fruits. You'll find Robinson vineseeds serving the markets of the world because farmers everywhere who have tried them know Robinson vineseeds are better . . . better because they are products of specialization.

The Clarence Brown Seed Company, specialists in tomato and pepper seed, has consolidated with the Robinson organization.

Available only through authorized distributors and dealers.

Lawrence Robinson & Sons
MODESTO, CALIFORNIA

FREE! Sample package of Robinson specialized vineseed and subscription to Robinson monthly newsletter! Prove to yourself that our quality vineseeds are better because we specialize. Mail this coupon today.

Name_____

Address_____

City_____ State_____

LETTERS
TO THE EDITOR

Plant Grower Writes

Dear Editor:

Your article on the plant growing business of the Bettinger brothers in the March issue was very interesting. I would appreciate it if you could send me their complete address as I would like to visit their farms.

I grow about 22,000 flats of plants each season and would like to increase my operation, but don't know where to purchase machinery of their type.

Hazardville, Conn. Chester Luczai
Sunnyfield Farms

The address of Bettinger Farms is Swanton, Ohio.—Ed.

Vegetable Judging Contest

Dear Editor:

The notes accompanying the Top Honors picture in your February issue (page 49) state that for the second consecutive year the University of Connecticut received top team honors in the National Intercollegiate Vegetable Judging Contest. To give credit where it is certainly due, we would like to emphasize the fact that this was Connecticut's third consecutive win, not their second. The Folding Paper Box Association's rotating trophy thus becomes Connecticut's permanent possession.

Twelve universities competed in the contest, Cornell and Purdue ranking second and third respectively. Top individual honors went to Dan Davidson of Purdue.

Carbondale, Ill. Wm. T. Andrew
Chairman, National
Intercollegiate Vegetable
Judging Committee

Greenhouse Plans

Dear Editor:

Thank you so much for the plastic greenhouse plans [available from AMERICAN VEGETABLE GROWER, Willoughby, Ohio for 50 cents]. There is so much valuable information in the literature that will be helpful to my husband, who is right now busy erecting our first greenhouse. All his brothers are in the greenhouse business, but we are getting started rather late. If this greenhouse is successful, we may add more. The thing that held us back all these years was the cost.

Mrs. Morten Christensen
Strongsville, Ohio

A Pat on the Back

Dear Editor:

May I take this opportunity to express my thanks to you for your part in making our National Junior Vegetable Growers convention such a success.

We cannot estimate the value that we contribute to the education of the youth in this worthwhile organization. We Americans spend so much money on delinquents and think nothing of it but sometimes we do not give too freely to the organizations that are preventing delinquency and building character. Therefore, this makes your contribution worth so much more. You have given freely and helped many boys and girls enjoy another convention.

Springfield, Ill. C. A. Armstrong

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CALENDAR OF COMING MEETINGS AND EXHIBITS

June 12-14—Idaho Grower Shippers Association, 30th annual convention, Sun Valley.—Edd Moore, exec. sec'y-manager, Box 1100, Idaho Falls.

June 14—Fourth annual Long Island Strawberry Festival, Mattituck, N.Y.

June 23-26—Third Annual Mushroom Industry Short Course, Pennsylvania State University, University Park.—Director of Short Courses, College of Agriculture, Penn. State Univ., University Park, Pa.

Aug. 12-13—Ohio Pesticide Institute, Ohio Agricultural Experiment Station, Wooster.

Sept. 8-9—United Fresh Fruit and Vegetable Association, 10th annual merchandising and management conference, Morrison Hotel, Chicago, Ill.—Association offices: 777 14th St., N.W., Washington 5, D.C.; 903 Grand Ave., Kansas City 6, Mo.

Sept. 24-26—Florida Fruit and Vegetable Association, Hotel Fontainebleau, Miami Beach—Headquarters: 4401 E. Colonial Dr., Orlando.

Sept. 29-Oct. 1—Texas Citrus and Vegetable Growers and Shippers; Shamrock-Hilton Hotel, Houston.—Headquarters: Harlingen.

Oct. 13-15—Produce Packaging Association, eighth annual conference and exposition. Park Sheraton Hotel, New York.—Robert A. Cooper, exec. sec'y, 500 Fifth Ave., N.Y., 36, N.Y.

Nov. 17-19—Tenth annual meeting of National Potato Council, Hotel Washington, Washington, D.C.—National Potato Council, 542 Munsey Bldg., Washington, D.C.

Dec. 3-4—North Central Weed Control Conference, Netherland Hilton Hotel, Cincinnati, Ohio.—C. J. Willard, Co-chairman, Local Arrangements Committee, NCWCC, H & F Bldg., Ohio State University, Columbus 10.

Dec. 8-11—Vegetable Growers Association of America Golden Anniversary Celebration, Cleveland, Ohio.—Joe Shelly, Sec'y, 528 Mills Bldg., 17th St. and Pennsylvania Ave., N.W., Washington 6, D.C.

SEED FIRMS MERGE

TWO California seed companies, Lawrence Robinson and Sons, of Modesto, and Clarence R. Brown Co., of San Juan Capistrano, recently consolidated.

Marketing and sales operations of the merged companies will be conducted through the Modesto office under joint supervision of Clarence Brown and the Robinson staff. The Robinson firm has specialized in the production of vineseeds for nearly a century. Marketing manager of the Robinson firm is Lawrence Robinson, Jr.

The Brown company has specialized in tomato and pepper seed. Clarence R. Brown will continue to supervise breeding and marketing of specialized pepper and tomato seed. E. Leigh Abernathy is general manager of the San Juan Capistrano production program.

FOR YOUR CONVENIENCE

When changing your address, or in any matter pertaining to your subscription, please send your address label from your last copy of AMERICAN VEGETABLE GROWER. Having the address label, together with the information it contains, enables us to give you quick, efficient service. Send your address label to: Betty Hindman, Subscription Department, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

"Paid for itself three times the first full season!"

CHARLES MUNGAI • Florida and Pennsylvania Truck Farmer

"On our farms in Florida and Pennsylvania", says Mr. Mungai, Partner and Manager, Mungai Bros., "our Myers Air Sprayer can do the same job as our old boom rig, with only half the materials. And because our Myers unit can cover more than 100 acres per day, we don't need supplementary airplane dusting anymore.

"Add in the labor savings of a one-operator unit, and we're saving thousands of dollars per year. Reduced crop damage is probably saving us thousands more".

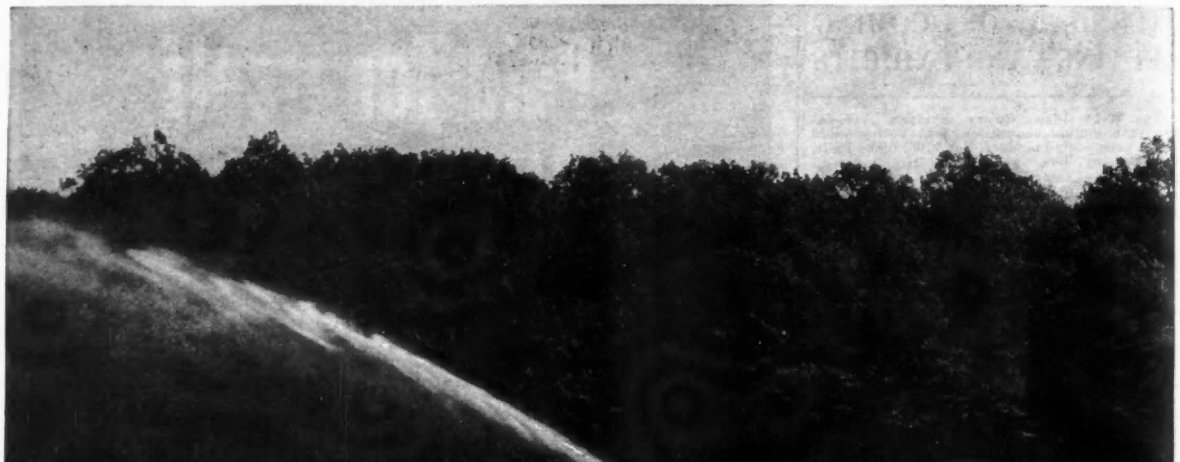
A Myers Air Sprayer will help you produce better yields more economically. Call your nearest Myers sprayer dealer and arrange for a demonstration in your own fields.

Myers POWER SPRAYERS and Irrigation Pumps

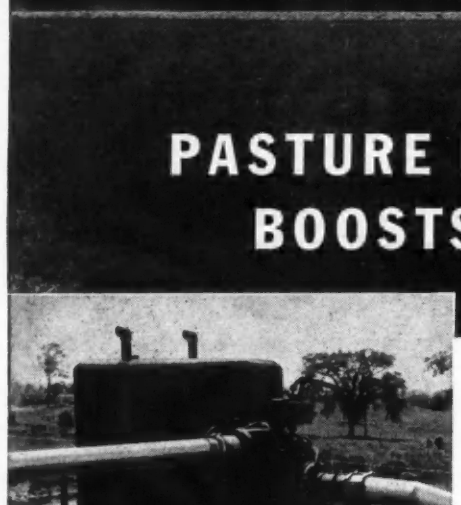
THE F. E. MYERS & BRO. CO.

Ashland, Ohio • Kitchener, Canada

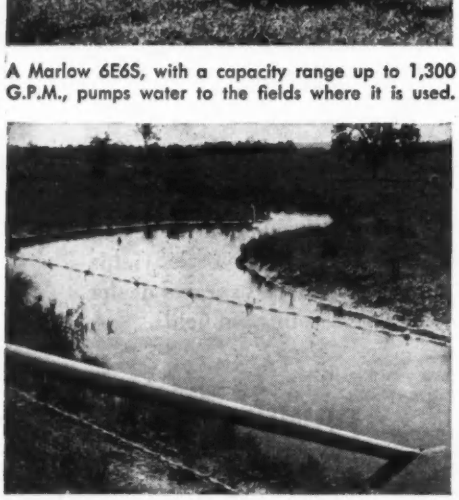
Myers®



PASTURE IRRIGATION BOOSTS MILK PRODUCTION!



A Marlow 6E6S, with a capacity range up to 1,300 G.P.M., pumps water to the fields where it is used.



This stream that runs through the Farm supplies water for Clarence Vleer's irrigation system.

This giant head sprinkler covers a 390 foot diameter circle and lays down .45 inches of water per hour.

Adequate Silage Provides For Winter Feeding

To Clarence Vleer, Middletown, New York, sprinkler irrigation is *the* reason why his 50 head of dairy cattle are well fed and their milk production is maintained at peak level. On his 120 acres, 20 are planted with corn, 15 in sudan and soy bean mix and the remainder with alfalfa and hay to provide adequate pasture as well as silage for winter feeding.

The system's designer, Edwin Sobiech, Irrigation Engineer of Unionville, N. Y., used 1,200 feet of 4" pipe, 900 feet of 5" pipe, a 400 G.P.M. giant-head sprinkler, 12 sprinklers rated at 30 G.P.M., and a Marlow 6E6S sprinkler-irrigation pump powered by a Chrysler engine. Water is taken from a small creek that runs through the farm and pumped over a ¼ mile where it is distributed by the sprinklers. According to Mr. Vleer, without dependable Marlow irrigation, his cows would not and *could not* produce all the milk they now do.

If you'd like more information on Marlow sprinkler irrigation, write today for Bulletin I-57 and the name of your Marlow dealer.

Marlow PUMPS

DIVISION OF

BELL & GOSSETT CO.

MIDLAND PARK, NEW JERSEY

Morton Grove, Illinois ● Longview, Texas 7-301

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Real Estate Erosion *versus* QUALITY VEGETABLES

Is urban expansion in California pricing the grower out of business? Not so, says Santa Clara Farm Advisor Seyman, who tells of T & L Farms' successful cauliflower enterprise

John Lucchetti, T & L Farms, and William Seyman discuss finished product. Carton contains 12 cello wrapped heads of Snowball cauliflower.

By WILLIAM S. SEYMAN

WILL rapid urban and industrial development close out vegetable growing operations in some California areas and thereby lessen national market competition?

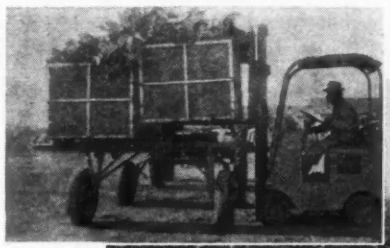
In the October, 1957, issue of AMERICAN VEGETABLE GROWER, John Carew, a horticulturist of wide experience and sound judgment, suggests that market competition from California vegetables will in the future be lessened by "—production areas, for instance Santa Clara Valley, being eliminated by 'real estate erosion'."

What can and is the individual vegetable grower doing to meet this crisis of producing on high-priced land under a tightening market condition? Before attempting to answer either of these two questions let us take a bird'seye view of Santa Clara County.

From its northern border at the southernmost tip of San Francisco Bay, the county extends 45 miles south to the Pajaro River. With the Mt. Hamilton range on the east shutting it off from the hot San Joaquin Valley, and the Santa Cruz range on the west providing protection from the dampening influence of the Pacific Ocean, this 835,000-acre county has a nearly ideal climate for year around vegetable production.

The vegetable producing areas, grossing some $10 million annually, are roughly divided into two sections. In the more rural south the Gilroy area is most famous for its garlic, lettuce, and lima beans. In the north around San Jose the situation is a diversified one. As many as 20 different kinds of vegetables may be grown during the year, with celery being the most important warm season crop, while broccoli and cauliflower lead in the winter-grown vegetables.

Located on the eastern outskirts of San Jose proper is the Berryessa area. Here, bounded on all sides by busy traffic arteries and pressured by the ever expanding city, lie quiltwork patterns of small fields of broccoli, cauliflower, lettuce, cabbage, carrots, and a host of other vegetables. A part of this production is by small acreage growers who sell entirely to local markets. The rest is divided among growers of larger acreages who operate as growers, shippers, and packers. One such concern is that of T and L Farms.



Above, left: Basket is being removed from trailer by forklift which carries it into packing shed. Below, right: Cutting and loading broccoli in field. Tractor is pulling trailer carrying removable baskets.

Baskets of "flower" (right) are tipped by power hoist to ease laying of heads on moving conveyor belt. A circular power saw trims the heads.

Armond Torrello and John Lucchetti are the two business partners whose teamwork is responsible for making the T and L Farm operation roll. Armond, or "Mondo," supervises the growing end of the business while John handles the shipping and marketing. Both are sufficiently familiar with the other's responsibilities to pinch hit for each other when necessary.

While there have been changes and fluctuations in the kinds and quantities of vegetables grown since 1940 when the partnership was formed, these changes have largely been responses to varying market conditions and, with the exception of cellophane

(*Continued on page* 35)

Keep Your Crop *Growing*

The way you irrigate will govern the success of your irrigation system. Here are important factors to guide you

By W. BRADFORD JOHNSON
Rutgers University, New Brunswick, N. J.

HAS irrigation been a problem on your farm? New Jersey vegetable growers had problems in 1957 because of the most severe drought on record. Many farms suffered, but some growers made respectable showings without irrigation. How they did it may interest you. Some growers overcame difficulties as they developed new irrigation facilities.

As one grower said, "I usually count on irrigation each year to help grow my sweet corn, but last year irrigation was more than a supplement to rain. It just about replaced it."

For many growers the absence of rain meant crop failure or low yields, but there were exceptions. A total of 47 of the 236 members in New Jersey Ten Ton Tomato Club got 10 or more tons of tomatoes from an acre in 1957 without irrigating once. This was a remarkable achievement and examination revealed that some growers planted on land that had recently grown asparagus. The deep-rooted asparagus left the soil loose well down into the subsoil. With the soil in a well-loosened condition, tomato roots were able to penetrate early in the season and develop extensively. These plants were able to get enough moisture to thrive even during the drought.

All growers agreed that by having enough organic matter in their soil the increased aeration helped rooting. A plant with a good root system can get more water.

Other members of the Ten Ton Club were farming near rivers. The nearness of the river kept the water table higher than on farms located at a distance from water.

The overall effect of the drought was reflected in the decrease in number of Ten Ton Club growers from 1956. The rainfall in 1956 was about as evenly distributed as can be expected. There were 719 members in 1956 compared with 236 in 1957.

A great many growers dug new ponds to get the water they needed to irrigate. Several growers reported burning the foliage when these new ponds were used.

In Camden County a grower had two ponds 150 yards apart. In one pond the water was clear. In the other he noticed that the water remained the color of tan clay and murky for days. This second pond had caused burning of tomato foliage and fruit. A test of the water showed the pH to be 3.2. The addition of lime cleared the water as it became less acid. The murkiness was due to colloidal suspension of clay. In ponds that are cloudy but have a pH of 6.0-6.5, the water may be cleared by the addition of gypsum.

This field of cabbage was irrigated unevenly. Light colored areas received practically no water. A combination of wind and the incorrect use of the irrigation system caused lack of uniformity.

Not all new ponds were dug early in the season. Some of those dug later, did not fill enough to be of much value. Even old ponds which usually had enough water in a more normal year could be used only for short periods. After using, the grower had to wait a day or more for the pond to fill before the next irrigation.

South Jersey farms bordering tidewater streams, creeks, and rivers had problems with high salinity. Most of the trouble was caused by failure to understand how tolerant plants are. The concentration of salt that irrigation water can contain before injury occurs varies with the crop. Celery and beets have taken high concentrations. Beans, tomatoes, and peppers are more easily damaged by salt. Celery has been known to withstand concentrations of 10,000 parts per million, which is half strength sea water. New Jersey does not recommend concentrations higher than 5000 ppm.

Growers using brackish water for irrigation can observe a few helpful rules. Place the intake as close to the surface as possible. Water at the surface is fresher. Water at ebb tide is usually safer than at flood tide. Most growers under these conditions start when the tide is half way out and continue through low water until the tide has come in half way.

New Jersey county agents tested salinity of irrigation water for growers to help them avoid crop damage.

On farms in the north Jersey muck areas drainage ditches served a useful purpose. Some ditches were dammed to create an adequate reservoir from which pumps could draw water to pass through portable sprinkler lines. In nearby Orange County, New York, one large onion grower pumped water into dammed lateral ditches until the level was nearly that of the field. This caused the water to travel

Know how much water your soil can take in an hour, and don't apply water faster than the soil can take it, are two fundamental irrigation rules. Above photo shows sweetpotatoes being irrigated.

Water pumped into drainage ditch converts it to irrigation ditch. These onion fields will benefit from high water level in ditch as moisture moves laterally; dams at end of ditch hold water.

laterally through the soil much as it does in the West when furrow irrigation is used.

Most portable sprinkler systems in New Jersey, which are designed with the advice of competent specialists do a good job. But now and then fields have poorly designed systems. The wrong size of pipe or sprinklers, inadequate pumps, and laterals incorrectly spaced have caused trouble.

Usually the greatest trouble is with the operator. Using the system incorrectly has been responsible for most of the headaches.

The **way** you irrigate depends on many of the following factors. Each one is of some importance in determining success:

Penetration. This is most often the reason for poor results. Growers do not water long enough to get the water where it does the most good. Many of them have no idea of the depth to which an inch of water will penetrate in one of their fields.

To check penetration of irrigation, dig a hole with trowel or spade. Using a soil sampling tube to check soil moisture is easier than digging. No matter what implement is used, you should be sure the water reached the area where the greatest number of feeding roots are found.

Condition of the Soil. If your soil is in good condition, it will allow water to penetrate faster than on those soils that are puddled or seriously compacted. Erosion can be reduced by having your soil in good condition. If water enters the soil readily, there will be less run-off to carry away topsoil.

Soil Type. Lighter soils may take water much faster than the heavier types. Know what your soil type can use in an hour. Don't put on water faster than the soil can take it.

Root Zone. Consider the location of the root zone when irrigating. A moist surface may look and smell nice to you, but the root zone may still be dry. Vegetables differ in rooting habit. A shallow rooted crop can be irrigated in a different manner than one that sends the majority of its roots deep. It is well in most cases, however, to water until the soil is wet to a depth of 6 to 8 inches. Then it will not be necessary to water so soon again. If you use shallow irrigations, you must continue them or roots which they cause to develop near the surface will die when the soil dries.

Dryness. Dry soil that has become powdery must be wetted gradually or the water will run off before it penetrates. A slow rate of application in this case is best.

Water Source. Figure the amount of water needed in the driest year. Can your pond or stream fill your needs? The numerous ponds added to Garden State farms in 1957 showed that facilities were inadequate under such dry conditions.

Wind. Wind may affect the uniformity of coverage by blowing the water to concentrated areas or by aiding the even spread over the area being irrigated.

If you irrigate, be sure you use enough fertilizer. Plants that are kept growing by irrigation will have a greater need for nutrients. Nitrogen can be leached from heavily irrigated soil, but do not neglect the other elements that will be used in larger amounts when a plant is growing well. Water helps plants, but fertilizer builds the kind of yield the market wants. Keep your crop growing.

THE END.

How to Get More for Your Pump Dollar

Here is the story of how Mr. Success and Mr. Failure developed their pump irrigation water supplies

By K. G. ALBERSON

The author, a Soil Conservation Service engineer at Clayton, New Mexico, has evaluated well and pump installations to determine how to get a dependable water supply. Published here are excerpts from his story which appeared in a recent issue of New Mexico *Extension News*.—Ed.

THE success or failure of a new pump-irrigated farm is often decided before the first seed is sprouted. The key to the success or failure is, of course, the water supply. A dependable water supply is a must.

Here is how **Mr. Success** and **Mr. Failure**, two neighboring growers, developed their pump irrigation water supplies.

Mr. Success thoroughly investigated local well contractors. He checked cost, methods, material, equipment dependability, and other wells that they had constructed.

Mr. Failure investigated one thing only—which driller would make a hole down to water for the least amount of money.

Mr. Success got a sturdy casing, firmly placed in a straight hole (perforated to match the conditions of the water-bearing strata), at a cost of $2200.

Mr. Failure very likely got thin, deteriorated casing, perforated in every conceivable manner. If he got a straight hole, he was just lucky. Cost—$1500.

Numerous pump salesmen contacted **Mr. Success.** He asked them to submit complete brochures on their equipment, showing construction and performance. He also noted which companies asked for well construction and performance data before designing a pump.

Since he knew nothing about pumping equipment, he contacted a qualified pump engineer before starting a well. He learned that a well test was needed before *anyone* could say what pumping equipment would supply the most water at the lowest cost. He also learned that nearly every new well will produce sand which is damaging to a pump; he wanted his well clear of this before installing his new pumping equipment.

Mr. Failure looked only for companies emphasizing low prices. He chose the cheapest pumping unit. He had it installed on the well and started pumping just as soon as the driller moved off the hole. Cost—$4500.

Mr. Success contracted with a reputable pump supplier to have his well developed and tested with the company's equipment and bought a pumping unit engineered to fit his well. Pumping unit cost—$5000; test and development—$500; total cost —$5500.

Up to now, **Mr. Failure** was way out in front. He had a well and a pump for only $6000. **Mr. Success** had a well and pump for $7700.

However, **Mr. Failure** was lucky if he got a 40% efficient pumping unit, flowing 800 gallons per minute. As the sand in the new well cut away the blades of the impellers, the efficiency went down, and he had to increase the speed of his motor to maintain discharge. Finally, the engine was running wide open and the size of stream still fell off.

His fuel bill climbed steadily as he increased the speed of his motor. After a few weeks, the engine began to show a power loss, due to continuous operation at full speed. The discharge continued to decrease.

Mr. Failure began to worry. His crop was suffering from lack of water. He abandoned half his acreage to save the other half.

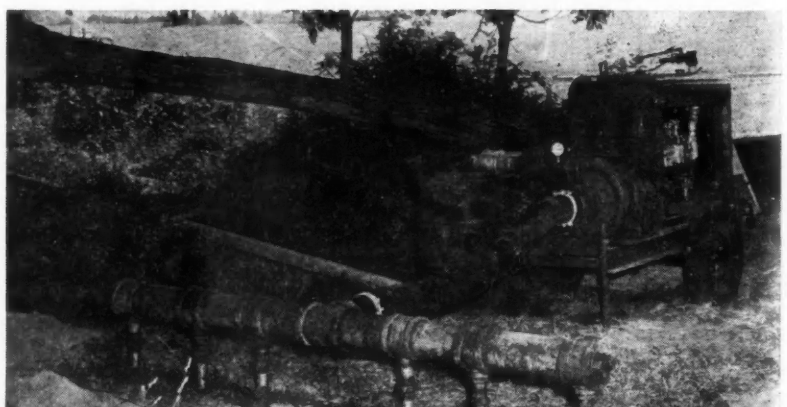
Everything was fine until the well caved in. A poor gravel pack bridged around the casing, allowing a large cavity to form. The wall of the cavity crumbled, pushing the weak casing to one side and locking the pump.

Mr. Failure had no well, a piece of a pump, and no crop.

Mr. Success got a pumping unit of 60% efficiency discharging 1200 gpm. The added efficiency allowed him to use the same size engine as his neighbor. With half again as much water, he could irrigate half again as much land. His well was clean. His pump remained at peak efficiency. His fuel consumption remained nearly constant, affected only by normal engine wear.

Your local Soil Conservation district can provide a qualified pump engineer upon request. Any reputable pump dealer will also obtain the services of a pump engineer from his pump supplier.

At the year's end, **Mr. Success** had a nearly new pump, a sound well, and a profitable return from his crop. And he can reasonably expect a profitable return from his investment for years to come. THE END.



The added expense of obtaining a dependable, properly-engineered pumping unit, like the Marlow pump shown here, can be repaid the first year with the saving on fuel and equipment repair alone.

How many tomatoes can a vine hold?

...use DITHANE M-22

After using DITHANE M-22 (maneb) for disease control, a lot of growers remark how the vines look so crowded with big, choice tomatoes. No one has yet counted the exact number per acre, but experiment stations have measured up to 15% higher yield with DITHANE M-22 than with other types of fungicides. DITHANE M-22 results in maximum yields because it gives maximum protection from anthracnose, early blight and late blight, gray leaf spot and Septoria leaf spot. With this manganese-containing fungicide, vines also develop a greener and more luxuriant foliage. Use DITHANE M-22 and see.

RHOTHANE FOR INSECTS

For better tomato insect control, use RHOTHANE *with* DITHANE. RHOTHANE *checks fruitworms, hornworms, pinworms, flea beetles, psyllids, and thrips.*

RHOTHANE *and* DITHANE *are trademarks, Reg. U. S. Pat. Off. and in principal foreign countries.*

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STATE NEWS

- **Late Planting in California May Create Harvest Problems**
- **Sweet Corn Promotion Highlights Florida's Farewell to Freeze Problems**

Wet Season Prompts Conference

CALIFORNIA — The 1958 wet season prompted a recent emergency conference of growers and farm advisors in the Sacramento and San Joaquin valleys and in the coastal areas. Purpose of the meeting was to help growers faced with problems of flooded lands, wet soils, delayed plantings, and alternate crops.

Dr. William L. Sims, vegetable crops specialist, University of California Agricultural Extension Service, Davis, presented current California vegetable crop information in reference to planting dates.

The total vegetable crops acreage in the state is about 818,000 acres, according to Dr. Sims. With a reference date of April 11 (date of the conference), the planting dates had passed for 270,000 acres. However, planting dates were still possible for 548,000 acres or two-thirds of the state's acreage, reported Dr. Sims.

Thus, planting dates for one-third of the acreage had passed. However, the wet season did not prevent the planting of the entire acreage. Only about 20,000 to 25,000 of the 270,000 acres were not planted.

This does not mean that production has been lost from 20,000 to 25,000 acres. The majority of vegetable crops which did not get planted could be planted for a later harvest season. Thus the problem of finding alternate crops is minimized.

The problem resolved itself to lateness in planting, an important factor in a competitive fresh market, in meeting processing quotas, and in obtaining satisfactory labor. Yields may be seriously affected by lateness. Growing season weather conditions will hold the trump card.

Tomatoes, potatoes, and melons constitute the greater acreage which will be affected by lateness. The cool season crops in the coastal counties will follow in general the usual seasonal markets.

WHEEL-TRACK PLANTING

Wheel-track planting in Wisconsin sweet corn fields can save growers about $5 per acre, or about 40% of tillage costs, reports Dr. Art Peterson, University of Wisconsin soils specialist. Detailed information on this system may be obtained by writing for Circular 559, *Wheel Track Corn Planting*, April 1958, from University of Wisconsin Extension Service, College of Agriculture, Madison, Wis.

Business Courses Offered

WASHINGTON—To meet the demand for young people trained not only in the technical aspects of growing but also in business, the department of horticulture at State College of Washington, Pullman, has added business courses to its present horticulture curricula.

Students majoring in vegetable production can combine economics, accounting, industrial management, marketing, business finance, and farm management with their regular schedule.

Other courses include business law, personnel administration, sales management, co-operatives, advertising, agricultural prices, and land economics. Additional information may be obtained by writing to the horticulture department.—*T. A. Merrill, Chairman, Dept. of Hort., State College of Washington.*

Sweet Corn Promotion

FLORIDA—Sweet corn growers in the state are promoting their spring harvest through an intensive advertising and promotional campaign in northern terminal markets.

Aided by the experience of Florida Fruit and Vegetable Association, growers are backing the promotion to introduce sweet corn into areas in which it has always been regarded only a "summer vegetable." The $50,000 campaign, which began last month, is also aimed at bringing Florida vegetables back to the attention of housewives from coast to coast, after a period of disastrous freezes.

Heading the promotion committee is Lewis Friend, of Pahokee, chairman, with George Wedgworth, Belle Glade, as vice-chairman; Harold Katsner, Sanford; Billy Rogers, South Bay; Mason Alger, Coral Gables; Edgar Wilder, Pahokee; Andrew Duda, Oviedo; Rosell Wilson, Pahokee; and George Sanders, Ft. Myers.

Sweet Corn Queen Cindy Friend, of Pahokee, Fla.

Results of Potato Varieties

MINNESOTA—The Irish Cobbler outyielded all varieties in the Red River Valley, according to a report on 1957 potato variety demonstrations by Orrin C. Turnquist, extension horticulturist, University of Minnesota.

Cobblers averaged 209 100-pound bags

Know Your . . .

VEGETABLE SEEDS

By VICTOR R. BOSWELL

U.S. Department of Agriculture

DANDELION

DANDELION is another of those very minor vegetable crops of which so little is grown in this country that no production figures are available on either the seeds or the greens. Probably no more than a few hundred pounds of seed are planted annually.

The name is a corruption of the French *dent de lion*, which means lion's teeth and refers to the teeth of the leaf margins of this plant. Dandelion belongs to the thistle family, along with lettuce.

The "seed" is similar in structure and size to that of lettuce (about 36,000 per ounce) and is actually a tiny fruit called an achene that contains a single seed. In contrast to the nearly smooth, finely ridged fruit of lettuce, the dandelion fruit has deep grooves, ridges, and numerous prominent, slightly curved teeth toward the distal end. The feathery tufts by which dandelion seeds are wafted about by the wind do not show in the picture; they have been broken off just beyond the uppermost curved teeth.

In producing dandelion seeds, the seed plants must be gone over by hand daily during the harvest season to recover the seeds as they ripen, before they are carried away by the wind.

VEGETABLE GROWERS:

Here's a weed-killing "blanket" that can save $20 to $90 an acre on hand-weeding

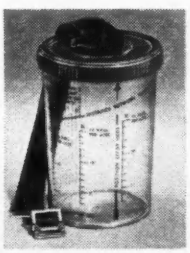
We call it Vegadex,® and it works a new way. You only have to spray it on once—at planting time. Vegadex forms an *invisible chemical blanket* over your soil. Annual grasses—and even some tough weeds like purslane and henbit—sprout, touch the blanket, and die.

Your vegetables—like celery, lettuce and cole crops—grow through unharmed, with few or no weeds to fight them for sunlight, water and plant food. And, Vegadex won't "build up" in your soil.

Vegadex practically eliminates *costly* hand-weeding. Last year, many vegetable growers saved from $20 to $90 an acre on labor costs by spray-weeding with Vegadex.

Before you plant your next crop, stop by your Monsanto Farm Chemicals Dealer—he'll give you an informative new folder on Vegadex.

HERE'S HOW THE VEGADEX "BLANKET" can kill weeds for you! All celery shown here was planted at the same time. But notice the weed-free rows at left which were band-sprayed once with Vegadex at planting.

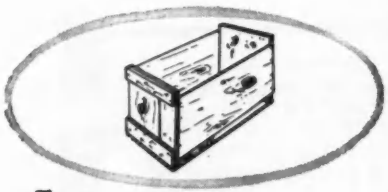


Make sure you're spraying right. Ask your Monsanto Dealer about the special offer on the Spray-Rater that accurately measures the amount of spray your rig applies per acre.

Vegetable Growers . . .

VEGADEX KILLS—annual bluegrass, bull grass (goose grass), crab grass, foxtail, pigweed, barnyard grass, chickweed, henbit (blue weed), and purslane.

VEGADEX IS SAFE FOR—collards, mustard greens, turnip greens, broccoli, cabbage, snap beans, soybeans, celery, sweet corn, kale, spinach, hanover salad, brussels sprouts, lima beans, lettuce, field corn.



Longer Life...for picking boxes and baskets

One quick, inexpensive dip in Cellu-san saves you money 5 ways:

- Wood won't become brittle and break so easily—stays "alive" and resilient.
- Containers stay cleaner, more sanitary —resist penetration by fruit juices.
- Crop contamination from mold is controlled, assuring much less waste.
- Tare weights are stabilized through far less moisture pick-up.
- Rot will not cause decay of wood fibers nor loosening of fasteners.

Write today for an 8-page brochure about Cellu-san—the most widely used wood preservative in the food industry.

Cellu-san

Chemical Products Division, Darworth Incorporated.

Address: 1 Pine Street, Simsbury, Conn., or P.O. Box 1422, Palo Alto, California.

Please send me illustrated literature about longer service life for harvesting containers.

Name_____

Company_____

Address_____

City_____ State_____

per acre. Next was Antigo, averaging 199 cwt; followed by Kennebec, Red Pontiac, and Cherokee, respectively. These varieties averaged 90% or more No. 1 size potatoes.

Kennebec was top yielder and had highest percentage of No. 1 potatoes at Grand Rapids and Osseo. The Russet Burbank variety was well adapted to the lighter soils in the Grand Rapids area and averaged 295 100-pound bags per acre. Highest yielder at Hollandale was Red Pontiac.

Three new potato varieties tested were Norland, Tawa, and Plymouth.

Norland, a red variety, was not one of the highest yielders but showed excellent market quality. It has smooth tubers, good distribution of shallow eyes, is more tolerant to common scab than Red Pontiac, and produces a quality chip.

Tawa, a white spud, has multiple disease resistance, high market and cooking quality. It matures along with Irish Cobbler, but has fewer grade defects. It produces good quality chips at harvest and after being conditioned from storage.

Plymouth, a scab-resistant, white variety with flat tubers, has shallow eyes, but somewhat rough and flaky skin. It is resistant to common scab, mosaic, and late blight.

Something New

GEORGIA—Two produce men are pioneering "pink" tomato production in the Tifton area by planting 80 acres of the Manalucie variety at Mystic in Irwin County.

Owners of the crop are Willie Berger, operator of Golden Acre farms at Miami, Fla., who has been a vegetable shipper for years; and A. Grizzard, of Atlanta, wholesale produce operator who buys produce on the Tifton market.

The men grew their own tomato plants at the Mystic site under polyethelene and were transplanting them by April 1. The plants will be staked at the proper stage of development. When ready, they will be graded and packed at the State Farmers Market in Tifton.

In addition to the vine ripe tomatoes, Berger and Grizzard are planting at Mystic about 160 acres of tomatoes to be picked in the green stage.—*Mrs. Pauline T. Stephens.*

New Co-op Organized

ILLINOIS—A new co-operative comprised of 32 growers has been organized at Cobden for packing and marketing cucumbers and peppers. Another new development is the production of pickles in Pulaski-Alexander counties.

SPOT DETECTOR FOR VEGETABLES

The USDA Agricultural Marketing Service has come up with a research instrument to detect maturity or spot defects inside potatoes and vegetables. If commercial use of the spot detector becomes practical, it will be possible to measure quality as fast as or faster and more accurately than by human judgment.

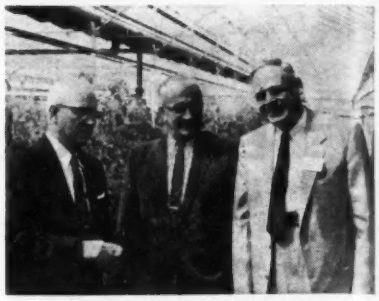
Daily Price Report

NEW JERSEY—The state Department of Agriculture is endeavoring to provide better market price reporting of New Jersey farm commodities.

Crops for which country point price reports were expected to be available this spring include asparagus, lettuce, snap beans, and strawberries.

From asparagus growers comes a report that 32,800 acres are expected to be harvested this year. Some of this acreage represents new beds just coming into production; other fields have been producing asparagus for six years or more. Asparagus is the state's largest spring crop; last year production was valued at $7.5 million.

Richard O. Ely, chairman of White Potato Industry Council, reports that the state seal of quality, now used on top quality eggs, will be used this season on New Jersey potatoes. Use of the seal will be permitted under a licensing system and will be limited to state potatoes inspected by a federal-state shipping point inspector and certified as meeting requirements of Grade U. S. No. 1, Size A.



GREENHOUSE PRESS LUNCHEON

Discussing the third annual Cleveland Greenhouse Vegetable Growers press luncheon which they attended recently are (left to right) Ellis D. Hoag, association vice-president and chairman of news and information committee; Paul D. Ruetenik, president; and Dr. L. J. Alexander, botany specialist, Ohio State Agricultural Experiment Station, Wooster.

The event was held at M. F. Cutting & Sons Greenhouse, the first greenhouse to grow experimental plots of the WR7 tomato variety developed at Wooster by Dr. Alexander. The variety now comprises the bulk of the $10 million annual harvest in the Cleveland area.

Motor Carrier Exemptions

ALABAMA—The departments of agriculture of six southeastern states have gone on record in recommending that no change be made in the Agricultural Exemptions contained in Section 203(b)(6) of the Motor Carrier Act.

This action was taken at a recent meeting of Agricultural Transportation Committee in Montgomery. Representatives of departments of agriculture in Alabama, Florida, Georgia, Louisiana, North Carolina, and Tennessee discussed issues relating to transportation of agricultural commodities.

Dewey C. Wayne, of North Carolina, committee chairman, said one of the most important issues facing agriculture today is the attack upon the motor carrier exemption. He stated "notwithstanding the very controversial aspects of this particular matter, insofar as this committee is concerned there was unanimous adoption of a motion that no change should be made in Section 203(b)(6) of the Motor Carrier Act."

Experimental Tomato Plots

NEW YORK—Tomato yields on experimental plots at Cornell University, Ithaca, reached 74 tons per acre last summer with Moreton Hybrid grown with sawdust mulch and irrigation.

Dr. A. J. Pratt, professor of vegetable crops, reports that plots with mulch but no irrigation produced 58 tons, those with irrigation and no mulch gave 52 tons, and those with neither mulch nor irrigation yielded 46 tons.

The plants in all plots were twice as many as usual, or 2 by 5 feet apart.

With snap beans, the mulch plus irrigation, and the irrigation only treatments, gave 9 tons per acre. Plots with mulch only, and with neither mulch nor irrigation produced 8 tons. All the plots received ½ ton of 10-10-10 fertilizer at the outset; the sawdust was applied an inch deep as soon as the tomatoes were set or the beans were up. Those receiving irrigation were supplied with enough water to keep the moisture level at field capacity.

THE MILLER AMENDMENT

. . . what it means to you

THE MILLER AMENDMENT to Public Law 518 sets limits on the amount of insecticide residues permissible on harvested crops. The Food and Drug Administration has established tolerances for *each* insecticide on *each* crop. Crops harvested with excess residues are subject to confiscation.

For insect control during the critical close-to-harvest period without residue problems, many states are recommending malathion sprays or dusts. They can be used on many crops up to 72 hours from harvest; on beans up to 24 hours . . . on all others, up to 7 days. Here's why: malathion kills fast, thoroughly. Its residues disappear rapidly. And, it has a high residue tolerance on most crops. All together, these features make malathion the ideal material for late season insect control.

Leading aphicide. Many states recommend malathion as the leading aphicide. It also gives fast, thorough kills on these other vegetable pests: beetles, leafhoppers, mites and worms. This wide use range helps growers eliminate multiple mixings and sprayings.

Offers safety in use. Unlike most other phosphate insecticides, malathion can be handled safely without respirator or special protective clothing. The USDA calls malathion, "... one of the safest insecticides to handle." And the U. S. Public Health Service says, "... the toxicities of malathion (oral and through the skin) are less than those of DDT."

With malathion, no respirator needed.

Malathion-perthane combinations control DDT resistant cabbage looper.

Compatible with other chemicals. Malathion is compatible with most other commonly used fungicides and insecticides.

For a free Malathion Handbook listing uses, rates, timing, etc., write: American Cyanamid Company, Agricultural Division, New York 20, New York.

This advertisement was prepared by the manufacturers of malathion insecticides as a service to growers.

DITHANE

the fungicide potato growers trust for early and late blight control

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STATE NEWS

Special Report

VEGETABLE VARIETIES FOR NEW HAMPSHIRE

NEWER vegetable varieties are tested each year throughout the state by University of New Hampshire to determine which are worthy of commercial trial. Some of these varieties being recommended to growers are listed below.

BEETS

Detroit Dark Red
An old reliable variety. The roots are deep red, globe shape, and have a satisfactory smooth exterior finish.

Sweetheart
Introduced by New Hampshire Experiment Station in 1956, this variety is the result of a cross between Detroit Dark Red and a sugar beet. Later than Detroit Dark Red and sweeter than other table beets.

BROCCOLI

Waltham 29
This variety continued to produce well from secondary shoots up until freeze-up in a 1957 trial.

CABBAGE

Golden Acre
A good early variety which produces the smaller heads demanded at the market. Heads are round, solid, and have few outer leaves.

Wisconsin Golden Acre
Head type and size are comparable to Golden Acre; however, it is not quite as heavy a yielder, but is preferred because of its yellows resistance.

CAULIFLOWER

Snowball M and Super Snowball
Snowball M produced slightly larger curds than Super Snowball. Both varieties gave large yields of top quality cauliflower in a 1957 variety trial.

LETTUCE

Pennlake
An early and uniform variety of crisp head lettuce. About a week earlier than Great Lakes.

Great Lakes
Not as early as Pennlake but a good reliable cropmaker. The newer improved strains are more uniform in maturity.

PUMPKIN

Jack-O-Lantern
Fruits are intermediate in size between Small Sugar and Connecticut Field. Although quite variable, the fruits generally are longer than they are wide, thus making them of desirable shape for Halloween jack-o-lanterns.

RADISH

Early Scarlet Globe
The best of three varieties in 1957 trials; produces globe-shaped roots with bright exterior color over white crisp flesh.

SQUASH

New Hampshire Bush Buttercup
An improved, higher yielding, earlier maturing Buttercup squash. The plant has shorter internodes and sets its first fruits close to the stem.

Baby Butternut
Fruit resembles Butternut in color and shape but is smaller, averaging 1 to 2 pounds, and is earlier than Butternut.

Blue Hubbard
Both the Colby and Rogers strains of this variety are popular in New Hampshire.

TOMATOES

Early Chatham
An early tomato developed at University of New Hampshire, it is a determinate plant which produces fruit averaging 3 to 4 ounces.

New Hampshire Victor
This tomato, also developed at University of New Hampshire, is a little later than Early Chatham. It is a determinate plant which produces fruit averaging 4 to 5 ounces.

New Hampshire Surecrop
A 1956 introduction of University of New Hampshire, this determinate variety is resistant to late blight, has some tolerance to early blight.

Rutgers
This is the only variety grown in New Hampshire for commercial processing.—*John T. Kitchin, U. of New Hampshire.*

PRE
PRO

Phosdrin applied

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It is in
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Phosdrin.

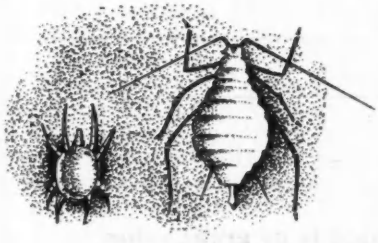
PREHARVEST PROTECTION

Phosdrin insecticide can be applied close to harvest

THE outstanding performance of Phosdrin insecticide for control of insect infestations close to harvest is being recognized by growers throughout the country. The material, made by Shell Chemical Corp. at its Denver plant, is marketed by leading agricultural formulators under their own brand name. Since the new insecticide has an extremely short residual life it can be used from one to four days before harvesttime.

It controls aphids, grasshoppers, leafhoppers, and mites on beans, peas, potatoes, cucumbers, and tomatoes. It also controls aphids, cabbage loopers, imported cabbage worms, grasshoppers, leafhoppers, salt-marsh caterpillars, mites, cutworms (climbing), dipterous leaf miners (adults), and lygus bugs on broccoli and cabbage. All these vegetables may be treated up to one day before harvest.

On lettuce, Phosdrin can be applied up to two days before harvest for control of aphids, corn earworms, cutworms (climbing), dipterous leaf miners (adults), cabbage loopers, imported cabbage worms, grass hoppers, and mites on turnips, turnip tops, and mustard greens. It also controls aphids, cabbage loopers, imported cabbage worms, grasshoppers, leafhoppers, salt-marsh caterpillars, mites,



Mite and aphid, greatly enlarged. These insects attack nearly every kind of vegetable crop.

cutworms (climbing), dipterous leaf miners (adults), and lygus bugs on Brussels sprouts, cauliflower, collards, and kale.

On spinach, it can be used up to four days prior to harvest to control aphids, cabbage loopers, imported cabbage worms, grasshoppers, leafhoppers, mites, dipterous leaf miners (adults), cutworms (climbing), salt-marsh caterpillars, and false chinch bugs.

It is important that strict safety measures be observed when applying Phosdrin. THE END.

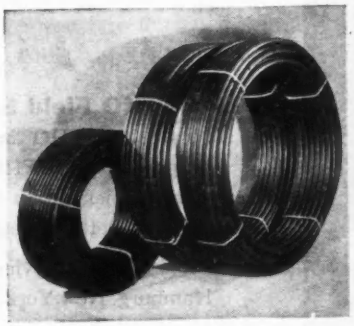
Get Higher Crop Yields with a LOW-COST Irrigation System of USS NATIONAL* POLYETHYLENE PIPE

BIGGER YIELDS, better crops—the kind of produce that brings TOP market prices—that's what you get with proper water supply . . . and now National Polyethylene Pipe offers you a sensible, low-cost piping that you can easily install yourself.

Flexible, easy-to-work-with National Polyethylene Pipe can be run anywhere you need it . . . bend it around corners of buildings, lay it over obstacles, use it along crop rows, take short cuts under fences. You simply measure off the lengths of pipe to suit your plan, then cut them with a knife or hacksaw. Insert a fitting and clamp it into place, tighten it with a screwdriver. There's no problem connecting your new National Polyethylene Pipe Irrigation System into your present setup. And a variety of adapters is available.

National Polyethylene Pipe can't corrode. Acid, salt, alkali and other soil chemical actions won't cause it to rot. And it's *rugged*—rough handling will not crack or break it; water freezing in the pipe won't burst it; and it does not stiffen when exposed to temperatures from —90°F. to +120°F. The smooth inner surface inhibits the build-up of chemical deposits, prevents clogging, and offers low resistance to pumping. It is made from 100% virgin polyethylene to which 2% of an inert black pigment filler has been added to prevent deterioration from ultraviolet rays.

*Trademark



Complete details on how National Polyethylene Pipe can serve you are available. Write to: National Tube Division, United States Steel Corporation, 525 Wm. Penn Place, Pittsburgh 30, Pa. Ask for Bulletin No. 29.

National Tube Division of USS TRADEMARK United States Steel

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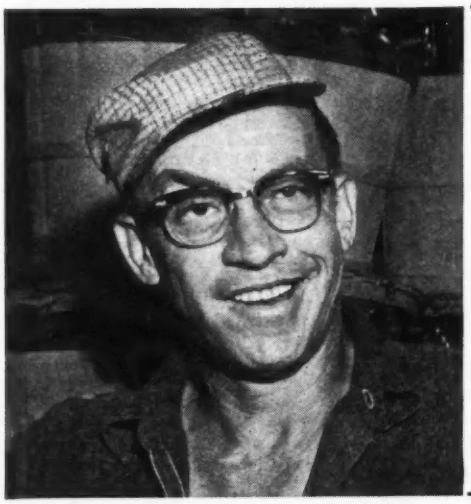
ORTHO helped us grow better vegetables

say leading vegetable growers



"ORTHO insecticides and fungicides, in my estimation, are tops. They are backed by years of constant research and ORTHO Fieldman are of great value to us. We have been getting outstanding products, service and sound advice from the ORTHO people."

From a field interview with Mr. Leonard Bettinger, Swanton, Ohio.

"ORTHO Field Service is of great value to me. ORTHO timely field checks and the proper use of ORTHO insecticides and fungicides, as recommended by the Fieldman, have helped me grow better vegetables."

From a field interview with Mr. Floyd Meyer, Hamburg, New York.

When this advertisement appeared last month, the photographs of Mr. Bettinger and Mr. Meyer were accidentally transposed. These gentlemen are now correctly identified.

Excellent control of pests, healthier appearance. "We've used ORTHO products exclusively for pest control on our potato crops. We are particularly sold on ORTHOCIDE 3-way mix and other ORTHO wettable powders. We believe that the vines have a healthier appearance and the control of pests was excellent. The fact that it wasn't necessary to spray as often when ORTHOCIDE 3-way wettable powder was used saved us money."

From a field interview with Warren and George Baker, Middletown, Delaware, shown above with ORTHO Fieldman James McFadden (left).

ORTHO offers a crop protection program tailor-made for your area

Your ORTHO Fieldman knows the particular problems of your area wherever you farm. When you buy the ORTHO program you get the benefit of this technical field service, a half century of research, and all the scientific experience that makes ORTHO America's number one line of agricultural chemicals.

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A Subsidiary of California Chemical Company

Scientifically trained Fieldmen located in all of the nation's leading vegetable growing areas.

Executive Offices: Richmond, Calif.; Washington, D.C. District Offices: Portland, Ore.; Sacramento, San Jose, Fresno, Whittier, Calif.; Phoenix, Ariz.; Salt Lake City, Utah; Maryland Heights, Mo.; Shreveport, La.; Memphis, Tenn.; Maumee, Ohio; Haddonfield, N.J.; Springfield, Mass.; Medina, N.Y.; Columbia, S.C.; Orlando, Fla.

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For the First time a High-Pressure sprayer that every vegetable Grower can afford. Heavy steel tank with 100-gal. capacity, husky mechanical agitator, unique pump mount that permits the use of your weed sprayer or our new Wanner 500 psi pump, Hi Pressure Hoses, flexible drive line, row crop attachments. Everything you ever wanted in a sprayer and you can carry it on your three point hitch, take it with you wherever the tractor goes. No trashed up fields, no crops smashed into the ground. Just pin it on and do your job.

PAK-TANK only $125.00

PAK-TANK complete with Wanner Hi-Pressure pump $295.00
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Wanner Piston Pump only—12 gal. per min. capacity, 500 p.s.i. $125.00

Rear's also manufacture Trailer Model Pull-Tank with all above features—200 and 300 gal. capacity.

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NEW . . . **HALE**
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PTO Irrigation Pump

Now you can get *full* benefit from your tractor. Use it for "off hour" irrigation with the new HALE 3 PTF Irrigation Pump. Designed as a medium sized Irrigation Pump with a wide range of volume and pressure—it is compact, efficient and economical to operate. It can also be used as a booster in your present system.

Field tested 3 years, the 3 PTF features a case hardened steel gear drive of the same high quality as on your local fire engine.

2 models available. 3" suction. With 550 RPM take off speed, it will pump 350 GPM at 80 PSI.

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We'll send you, immediately, information on the new 3 PTF and the FULL line of Hale Quality Built Irrigation Pumps with capacities for 120 to 1560 GPM.

HALE Irrigation Pumping Units are sold thru Distributors who are well qualified to engineer a system best suited to YOUR needs.

Dept. AVG:
Please send details on the new 3 PTF and other HALE Irrigation Pumps.

Name.....
Address.....
Water Source..... No. Acres.....

Irrigation Division

HALE FIRE PUMP CO.
CONSHOHOCKEN, PA

As It Looks To Me

What causes vegetables to go to seed prematurely? Dr. Carew discusses this often misunderstood problem and suggests ways of overcoming it

By JOHN CAREW
Michigan State University

BOLTING or premature seeding of many vegetables, particularly celery, lettuce, onions, carrots, and spinach, is occasionally a serious problem. It is frequently aggravated because some growers have mistaken ideas of the cause.

Not long ago, a veteran celery grower had a severe case of "seeders." Almost a third of his plants had formed seedstalks by the middle of the summer.

"It was that sharp frost we had just after planting," he insisted. "I should have hardened-off my plants longer."

"No!" I replied. "It was the long spell of cool weather that did it. A single frost will not cause bolting."

Scientific Evidence

A wealth of scientific evidence has been collected on the subject of premature seeding in vegetables. Much of it has come from research carried on by Dr. Homer Thompson and his students at Cornell 20 to 30 years ago. Time has not dimmed the value nor the accuracy of the work. In view of the past cool spring, it seems appropriate to summarize our present day knowledge:

Celery: Exposure to cool weather, averaging 40 to 50° F. for 10 to 30 days is the primary cause of bolting in celery. Cabbage is affected similarly except that longer cold periods are generally required. Continuous warm weather, near 70 to 80° F., immediately after this cold exposure may overcome its effect. Varieties differ markedly in their tendency to go to seed early. Checks in growth as a result of drought, lack of fertilizer, or frost will not alone cause bolting, in fact, they usually delay it.

Lettuce: Long days and high temperatures together promote bolting in lettuce. Research by Dr. S. W. Wittwer indicates that while the formation of seedstalks in Bibb lettuce is controlled by length of day, subsequent development of the seeder is regulated by both day length and temperature. Thus, bolting in lettuce is more a problem in the summer when days are longer and temperatures high. Varieties differ in their tendency to shoot to seed early.

Onions: Bulbing and seedstalk formation in onions are closely affected by temperature and length of day. The fact that Bermuda onions cannot be satisfactorily grown from seed in the North and Brigham Yellow Globe will not bulb properly in the South is due to differences in day length and temperature. (Differences in length of day are often not fully appreciated. In northern areas of the U.S., summer days are often 15 hours long compared to 9 hours in the winter. In the South, however, the range is usually only from 13½ to 10½ hours. These seemingly minor differences have marked effects on the growth of many vegetables.) Undesirable bolting is particularly a problem with set onions. Large sets, generally over ¾ inch, and sets stored at 40 to 50° F. have the highest percentage of seeders. Sets stored at warm temperatures, 85 to 90° F., will have many less seeders.

Carrots and Beets: Some varieties form seedstalks more readily than others. Prolonged cold spells, usually for two or three weeks below 50° F., will increase the percentage of bolters.

Spinach: Long days and high temperatures cause bolting of spinach. Thus, seedstalk formation is more a problem in the summer when the weather is warm. "Long-standing" varieties such as America and Long Standing Bloomsdale have been developed to make midsummer plantings commercially possible.

How to Reduce Losses

Losses from bolting may be reduced in the following ways:

a) Buy varieties or strains resistant to bolting and adapted to your local day lengths and temperatures.

b) Time plantings to avoid unfavorable temperatures and day lengths. Early planted celery or midsummer lettuce, for example, is more likely to shoot to seed.

c) Avoid exposing celery and cabbage plants in greenhouses to prolonged low temperatures. THE END.

BUSH TYPE WATERMELON

New varieties being developed may revolutionize melon culture

By H. C. MOHR

Texas A & M College, College Station

THE development of bush varieties of squash has done much to simplify cultural and harvest operations with this crop. Now a similar hereditary growth characteristic has been found in watermelon.

A single bush watermelon plant was discovered near Nacogdoches, Texas, in 1953. It covered an area of about 5 feet in diameter. The normal (vine) plants in the same field covered three to four times as much area. This bush plant had a full crop of melons which were typical of the Desert King variety being grown in this field. Melons produced by Desert King have yellow rind and yellow flesh. They are popular on local markets in the South but are not used for shipping.

Investigate New Type

During the three years following its discovery, this new type was grown and investigated genetically at the Texas Agricultural Experiment Station. A uniform variety was developed from it by inbreeding and selection. The new variety, **Bush Desert King,** was released by the experiment station to watermelon seedsmen in 1957 for seed increase. Seed should be available to the public in limited quantities this year from commercial seed houses.

Two characteristics of Bush Desert King which will limit its usefulness are 1) the yellow flesh color which is not widely popular and, 2) the late maturity, which is also a characteristic of the original Desert King. For these reasons the new variety has been recommended only for home gardens and where yellow fleshed melons are accepted.

In the meantime, however, new bush varieties are being developed by watermelon breeders in a number of states, using Bush Desert King as the parent source of the desired compact plant type.

The potential advantages of the bush type, if realized, may revolutionize watermelon culture. Preliminary experiments indicate that each plant can be grown on one-half to one-third the area presently required. In these experiments, acre

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Again Available!

Thoroughly tested copper-zinc-chromate complex that has provided excellent results for growers and in agricultural experimental stations.

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- Supplies needed Trace Elements—improves vegetable quality
- Safe to use . . . no residue tolerance restrictions on harvested crops
- Sticks better as spray or dust
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NUTRI-LEAF "60" Soluble Fertilizer

Foliage Feed Your Crops—Spray it on!

Safe, easy nourishment for plants. Feeds quickly, even when ground is excessively moist or dry.

- 20-20-20 analysis 60 full units of major plant food, plus most known trace elements
- Can be mixed with insecticides and fungicides . . . completely and instantly soluble in water
- Sticker and spreader added—quickly absorbed and retained by foliage
- Hormone added to increase root growth and promote fruit set

TOMATO-SET HORMONE SPRAY

Increases the set, fruit size and yields of tomatoes. Can be applied with your regular insecticide and fungicide programs.

- Can be applied as *broadcast spray*
- Insures good crop during period when weather is unfavorable for fruit setting. Spray when blossoms are opening
- Effectiveness demonstrated by three years of research work

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MILLER CHEMICAL & FERTILIZER CORP.
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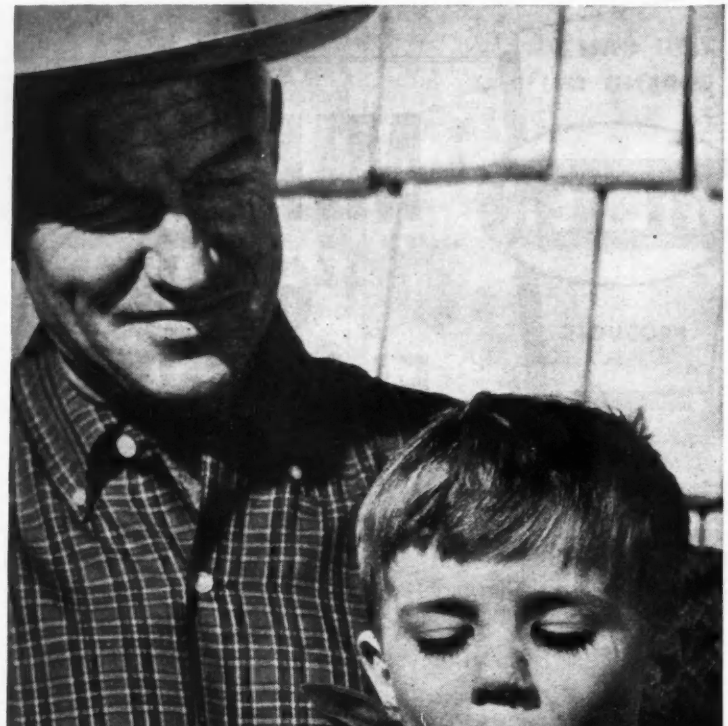

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Tomatoes like this bring you top prices. During the growing season Trithion protects them against destructive pests up to 4 times longer. Cost? Actually less than most insecticide-miticides—because it lasts longer, needs fewer sprayings. Use Trithion to earn more money on a whole range of crops. Ornamentals, vegetables, fruits, cotton, many others. Growers find it a powerful new weapon against aphids, mites and mite eggs (104 pests in all). Trithion is easy to use, leaves no off-flavor. Plan now to cash bigger crop checks this season. Ask your dealer for Trithion today.

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yields were nearly tripled because of the higher plant population.

One reason that watermelons are seldom an irrigated crop is the wide spacing used between rows. This is not conducive to efficient use of irrigation water. With the close spacing which can be used with bush types, this disadvantage no longer exists.

The old vine-type watermelons have been difficult to adequately cover with spray or dust for control of insects and disease. Not so with the bush type—the compact, rather upright, growth can be quickly and completely covered with fungicide or insecticide.

In many parts of the country growers are plagued with strong winds during early growth of watermelons. This results in severe damage to vines which are whipped back and forth. Bush types have stouter, more rigid, shorter stems, making them resistant to this damage.

Dense Canopy

The leaves on the bush type are close together on the stem. This provides a dense canopy over the fruit, protecting it from sunburn and concealing it from crows.

Bill Etzel, research assistant, points to nearly ripe, bush type watermelon. Several more melons are concealed under the dense foliage.

New bush watermelon varieties now being developed at the Texas station produce melons with traditional red colored flesh, green rind, and small seeds. The plant size varies according to variety, with some as small as 2 feet in diameter at full maturity and others with plants as large as 8 feet in diameter. Melon size also covers a wide range—from 3 to approximately 30 pounds, depending on variety. Early, midseason, and late varieties are being developed. THE END.

No seed can be supplied by Texas Agricultural Experiment Station, except to seedsmen for increase. Foundation seed has been purchased by Willhite Melon Seed Farms, Weatherford, Texas; D. V. Burrell, Seed Growers, Rocky Ford, Colo.; and Simpson Nursery Co., Monticello, Fla.

Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a three-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

VEGADEX

Our local store does not have the new weed killer, Vegadex. What is the address of the manufacturer?—New York.

Monsanto Chemical Co., 1700 S. 2nd St., St. Louis 4, Mo.

TOMATO FERTILIZATION

I grow around 40 acres of tomatoes a year and my soil test shows that I need 200 to 300 pounds actual potash to raise 20 tons per acre. What material should I use and should I plow it down, broadcast it, or use it as a side dressing?—Ohio.

Sulfate of potash can be beneficially used to supply one-half the potash requirement of tomatoes. It can be broadcast either before plowing or before fitting at the rate of 200 to 250 pounds per acre along with 500 to 600 pounds of a 5-10-20 fertilizer. A high analysis starter solution, 10-52-17, at transplanting time is also recommended and, to keep the plants growing well, supply them with up to 200 pounds of a 12-12-12 fertilizer at the time the fruits are beginning to set.

It would be well to obtain the recommendations of the Ohio Agricultural Experiment Station, Wooster, Ohio, for your particular area.

ROOT VEGETABLE HARVESTERS

Is there a machine for digging root-type vegetables such as carrots, beets, etc?—Iowa.

The following companies manufacture root-type vegetable harvesters: R. G. Bruner Mfg. Co., 22516 Hoover Rd., Van Dyke, Mich.; Chickering Vegetable Equip. Co., Belding, Mich.; Scott Viner Co., 1224 Kinnear Rd., Columbus 8, Ohio; Tawco Products, Inc., 1224 Chesapeake Ave., Columbus 12, Ohio; and Vegetable Harvesting & Machinery Co., 288 S. E. St., San Bernardino, Calif.

RADISH ROOT MAGGOT CONTROL

What is recommended for control of radish root maggot?—Ohio.

For broadcast pre-planting treatment, mix 4 to 5 pounds actual heptachlor with sufficient water to cover 1 acre. Spray this uniformly over the surface of the soil before planting and work into top 3 inches.

For post-emergence treatment mix 1 pound of heptachlor in sufficient water to cover 1 acre. Make first application after the seedlings are well up and repeat at 10-day intervals.

FIELD FORCE PARTS

Recently we purchased a 200-gallon take-off Field Force sprayer. Could you tell us where we can purchase repair parts?—Michigan.

From Field Force Mfg. Co., Phoenixville, Pa.

WHERE CAN I BUY SEED OF

Carolina Header collard?—North Carolina.

From Wyatt-Quarles Seed Co., Raleigh, N. C., or T. W. Woods, Richmond, Va.

Spartan onion, a new hybrid?—New York.

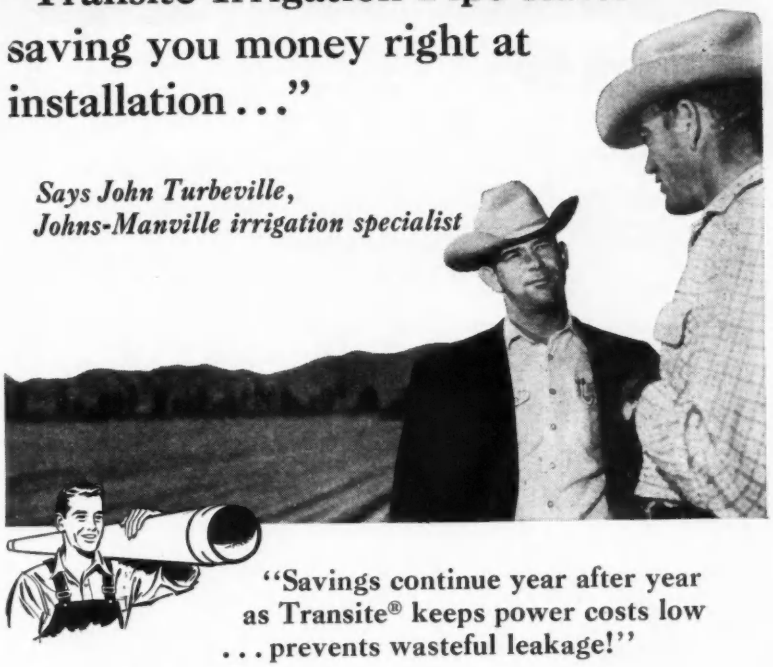
It is not yet commercially available. Ask your seedsman who supplies your onion seed to secure it as early as possible.

Giant Aconcagua pepper?—Ohio.

From Glecklers Seedmen, Metamora, Ohio.

"Transite Irrigation Pipe starts saving you money right at installation . . ."

Says John Turbeville, Johns-Manville irrigation specialist



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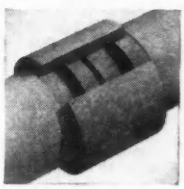
Transite's greater water-carrying capacity lets many farmers use pipe of smaller diameter than otherwise, reducing substantially the initial cost of the system. Other savings stem from Transite's long lengths, ease and simplicity of handling, and the quickly assembled Ring-Tite® Coupling. In operation Transite's smoothness keeps pumping costs low. There's no needless waste of power forcing water through corroded or rough pipe interior. Instead, water flows easily through the smooth Transite interior. Transite maintains this fuel-saving advantage, since it is immune to tuberculation—a form of interior corrosion that retards water flow by reducing pipe diameter.

Ask for your free copy of new Transite Irrigation Pipe brochure; use the coupon below. Mail it now! There's no obligation of course.



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As a pre-emergence application, Sinox PE pinpoints its destructive force on the weeds, thereby conserving soil moisture and fertilizer for the crop.

Be positive—use a weed control you **know** will do the job best — Sinox PE.

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QUANTITY Less than 10 M sq. ft.	QUANTITY Less than 50 M sq. ft.	QUANTITY Over 50 M sq. ft.
$5.15 per M sq. ft.	**$4.82** per M sq. ft.	**$4.65** per M sq. ft.

36" Black Polyethylene available with perforations to facilitate irrigation, 50¢ per M sq. ft. extra.

CLEAR Amilsco Polyethylene in widest range of widths and lengths. Send for price list.

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40 MILES TO MARKET

Long Island brothers grow vegetables for New York City

By PAUL WORK

New York State College of Agriculture, Ithaca

NOT all of New York City's vegetable crops roll across a continent or half a continent to get to market. Suffolk, the eastern part of Long Island, outranks all other counties of the state in dollar value of agricultural production, most of which consists of potatoes and vegetables, with some ducks (a few million!) thrown in.

The Abramowski brothers, John and Frank, of Smithtown, L.I., have 50 intensively cultivated acres, all of them in crop. This includes 25 acres of fall spinach, 15 acres of spring spinach, 25 acres of lettuce, and 20 to 25 acres of cabbage, with smaller acreages of bunched beets, carrots, parsnips, chicory, escarole, and knob celery. The total is over a 100 acres, so that on the average each acre yields two crops.

Spinach, fall and spring, is the main crop. Most of their production goes directly to New York, 40 miles away, with much of it for prepackaging.

Co-operative Needed

The Abramowski brothers are convinced that central packing on a co-operative basis is essential for smaller growers scattered about the East. Mass selling is necessary to meet mass buying. Only in this way can growers provide for long season of delivery and uniform goods uniformly packed.

The farm is level and the soil is sandy. No land is taken up with cover crops. The farm is much too busy for this practice, but a third to a quarter of it is covered each year with manure, some of which comes from the New York City police department stables. Manure costs from $5.50 to $7 a ton. From 50 to 60 tons of chicken manure are also used, along with about 90 tons of fertilizer, mostly 5-10-5. Borax is included in the complete mixture for cabbage and beets.

Fertilizer for spinach is applied before the land is made up, about 1200 to 1400 pounds per acre of 5-10-5. When the third or fourth leaf appears, a side dressing of 300 to 400 pounds of Chilean nitrate is added.

First and second sowings in spring are Dark Green Bloomsdale, then America, followed again by Dark Green, and, from August 7, Blight Resistant Savoy. Most of the seed is from Joseph Harris Co., Inc., Rochester, N.Y.

For the fall crop of spinach, 3 or 4 acres are planted twice a week during August. The land is made up into beds for 5 rows, 10½ inches apart. Planet Jr. seeders are used and are carefully adjusted, taking into account viability of the seed. A stand of 2 inches apart is approved on comeup and this is thinned by hand to 3 or 4 inches for final stand.

John and Frank Abramowski, with the latter's son, Jimmy, are shown here in parsnip field.

Chloro IPC is used as a pre-emergence spray for weed control. Also, a 5-row blade cultivator is run through three to five times. Chloro IPC is not effective against crab grass or lamb's-quarters. The Abramowskis are a little skeptical about residue in the soil, so they are using the material somewhat cautiously.

The farm has a 12-inch irrigation well, 50 feet deep, with a 500 gpm pump. The sprinklers apply 7½ gpm at 35 pounds pressure or 10 gpm at 90 pounds pressure. The whole farm is reached by underground mains with risers every 180 feet. The pipe is Alcoa aluminum, and Rainbird sprinklers are used. The pump is a 30-hp electric Johnson turbine.

Harvesting begins about August 25, with cutting above the crown so that the leaves fall apart, which is what the repackers want. The spinach goes over a belt, 3 feet wide and 12 feet long, for picking out yellow and defective leaves. It is made by Hallock and Grunther, Riverhead, N.Y. The spinach is not washed, but 7 pounds of flake ice are used in each bushel basket.

The Abramowski enterprise is a family affair. John has two sons, Stephen, 15, and Richard, 7. Frank has a son, James, 10, who sometimes drives a tractor. THE END.

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12 questions and answers to help you in considering coverage

HAIL is one of the greatest single destructive forces affecting farm crops of all kinds. Every grower at some time during the crop season gives some consideration to protecting his investment in his crops from loss or damage due to hail.

It is quite likely that some of the following 12 questions have occurred to most of our readers. Here are brief answers supplied by Robert R. Wilkinson, Rain and Hail Insurance Bureau, Chicago 6, Ill:

Q. How much does hail insurance cost?

A. Hail insurance varies in cost depending upon area and crop. Some crops are more damageable than others. Some areas are more subject to hail than others. The rate is based upon actual experience of the companies writing this coverage on the various crops in the particular area.

Q. What fruit and vegetable crops can be covered with hail insurance?

A. Practically all vegetables and fruits can be covered against loss by hail.

Q. How much insurance can I carry per acre?

A. Any amount up to the actual value of the particular crop at time of harvest. It is, however, a general practice to carry an amount equal to or perhaps slightly in excess of the actual cost of production.

Q. Where can this insurance be bought?

A. Hail insurance is written by the independent insurance agent representing one of the capital stock fire insurance companies that write this type of coverage. Florist's Mutual Insurance Co., National Bank Bldg., Edwardsville, Ill., specializes in hail insurance.

Q. How much protection should I take out?

A. At least enough to cover cost of production of the particular crop or crops to be insured.

Q. When is the best time to take out this insurance?

A. When it is evident that you will have a set of fruit, or when any other crop is up and shows a definite stand, or when the crop is far enough advanced so that actual loss will result from damage by hail.

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Q. In case of loss, how is adjustment made?

A. The procedure in adjusting a loss varies due to growing habits of the particular crop or variations in grade. Practically all types of fruit are adjusted on the basis of U. S. Standard Grades, while for vegetable crops, the procedure varies as to the stage of growth and the type of crop.

Q. What is complete damage?

A. Complete damage can be defined as a total or 100% loss to the physical crop.

Q. Who makes the adjustment?

A. With the co-operation of the grower or assured, losses are adjusted by men who are familiar with the type of crop that they are called upon to adjust. It may be another grower; it may be an agricultural extension man, or a college professor; it may be an insurance company fieldman who has had many years of experience with the various crops. Regardless of who the adjuster is, you will find that he is fair, impartial, and has a wide experience with the crops he may be called upon to adjust.

Q. When is the adjustment made?

A. The adjustment is made when the loss can be most accurately determined. Here again, it depends upon type of crop, stage of growth, and severity of the storm. There are times when this can be done two or three weeks after date of loss; and again a more accurate appraisal can be made just prior to harvesttime. When such adjustment is made, the per cent of physical loss to the crop is determined and applied to the amount of insurance covering the acreage damaged.

Q. When is the premium paid?

A. The premium is paid at the time the insurance is purchased. The agent remits the premium to the company with the application for insurance and the policy goes into effect 24 hours from the date and hour that the application is signed.

Q. When is the loss paid?

A. The loss is paid with dispatch after the adjustment is made. When the adjuster completes a signed proof of loss and forwards same to the company, a draft in the amount of the loss is forwarded to the agent as soon as the loss file is processed. This should be not over a week to 10 days after date of the adjustment has been made. THE END.

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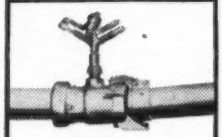

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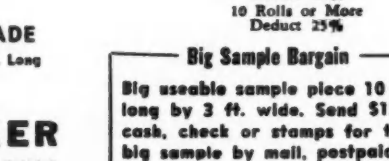

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GREENHOUSE CROPS

TOMATOES IN DENMARK

New cultural practices are being built on old methods

By ASGER KLOUGART

THE tomato is a very cosmopolitan plant. A native of the New World, it was introduced to the Old World and eventually became an important crop. Today it is the leading greenhouse crop in many European countries.

During World War II a change began to take place in cultural practices. While they have not been adopted by all the growers, much of Denmark's 450 acres of tomatoes under glass are being grown in accordance with the new techniques.

In Scandinavia tomatoes are normally planted from February 20 to April 1 in heated greenhouses. Most of the plantings are pulled out in early September so that a crop of lettuce, radish, or flowers can be grown before preparation for the next tomato crop begins. However, in about 30% of the greenhouses, tomatoes are grown until about November.

This article is the first of two installments on greenhouse tomato production in Denmark. The author, who is studying horticulture for a year on a W. K. Kellogg fellowship at Michigan State University, has been an extension officer 16 years for Association of Danish Market Growers in Copenhagen. The extension service is conducted by grower societies but supported by the government. Klougart is a graduate of Royal Agricultural College in Copenhagen.—Ed.

In the modern Danish greenhouse a good yield may reach 80 to 85 tons an acre. It must be emphasized that in the northern latitude, the length of day may be 18 to 19 hours as compared with 13 to 15 in the United States. In midwinter, on the other hand, days are only five to six hours long.

The best tomato yield is obtained in separate greenhouses or in the end sections of connecting houses. This effect is due primarily to better light conditions.

Separate houses are being built now to enable growers to raise almost any crop. The additional expenditure is not more than 8% compared with the connected houses.

A standardized 40-foot house is popular for tomatoes as well as for other crops, and a similar 65-foot house is also being built. The width of the glass has increased from 20 to 36 inches, which gives a light increase of about 8%.

Aerial view of a
near Copenhage
comprises 8 acr

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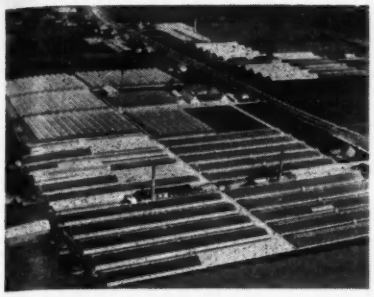


Aerial view of one of the newer greenhouse areas near Copenhagen, Denmark. Plant in foreground comprises 8 acres of tomatoes and 6 of flowers.

The key to an early yield lies in the propagation of young plants. The old practice was to sow seed in November and keep plants dry and cold through the dark winter days in seed trays and small pots, transplant in January, and get plants ready for February planting.

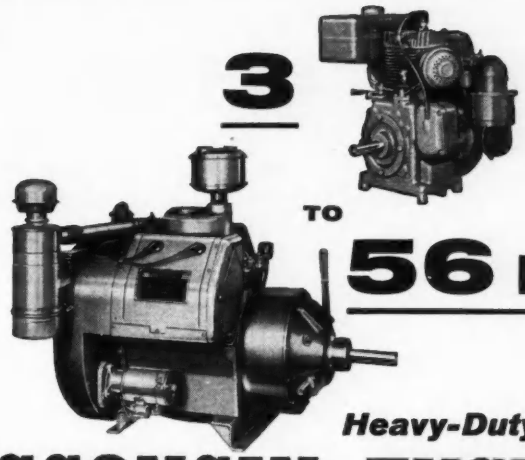
Artificial illumination is now used to shorten the time required for growing the plants. The most widely used light source is a high pressure mercury lamp with 450 watt capacity, placed 3¾ feet above the seedbeds or potted plants. Daylight is supplemented with light from 100-watt bulbs, one bulb per square yard of bed.

The lamps are turned on when germination begins and are used until planting-out time. They are first placed over half the house from midnight to noon, and then moved to the other half for the next 12 hours. The important thing is to keep the temperature during the hours of darkness as low as 55° F., to encourage development of good bottom clusters.

This experience is similar to results of tests conducted by S. H. Wittwer and F. G. Teubner, Michigan State University. The additional light is energy transferred to the plants. Research has taught us that in order to get maximum results from the use of artificial light, the nitrate content of the soil must be kept fairly high.

Virus disease is also a big problem. In order to prevent early infection, much attention is paid to the seedlings and young plants. By spacing 2 x 2 inches in the seedbed, the plants can be transplanted directly to the 4 x 4½-inch pot. Thus they are handled only once. If the plants reach the 5- to 6-cluster stage before virus appears, decrease in yield will not be great. Good results are obtained by giving virus-infected tomatoes an extra high nitrate level and regularly spraying with manganese so that a dark green foliage color can be maintained. Excess heat and lack of water are especially unfavorable for virus-infected tomatoes.

(Soil testing, an important phase of the Danish greenhouse cultural program, will be discussed by Mr. Klougart in a future issue.—Ed.)



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JUNIOR GROWER TAKES HURDLES IN STRIDE

A story of how James Wormley became last year's national NJVGA winner despite many difficulties

FOR four months last winter 17-year-old James Wormley, of Oswego, Ill., went through a siege of sickness and enforced bed rest, yet he went on to win the 1957 national award in the Canning Crops Section of the Production and Marketing Contest under National Junior Vegetable Growers Association. Lower production averages were the rule in his area last year but James came through with the best tonnage in his five years of growing tomatoes.

This success story actually began when James was introduced to tomato growing in 1951 through his dad's contract with Campbell Soup Co. From 1 acre in 1953 his project has grown to 16 acres. The first entry he ever made in the NJVGA Canning Crops Contest in 1956 won state honors for him as well as a check for $100 from the Illinois Canners Association.

Contest plans for his 2-acre plot last year called for a special fertilizer demonstration. The experiment was meant to test the amount of nitrogen needed and the best time to apply the nitrogen to obtain the best yield. Unfortunately, the results were not conclusive due to the fact that the farm is kept well fertilized at all times with manure and commercial fertilizers, to fulfill the regular nitrogen requirement. However, in the first two picks the biggest difference noted was that an original application of nitrogen before plowing aided greatly in much earlier maturity of tomatoes.

In the prize-winning project, tomatoes were planted on May 5. They were set 6 feet apart and spaced 18 inches in the row using a 2-row Holland transplanter. A starter solution of 10-52-17 was added to the water at the rate of 20 pounds per acre. A hard frost occurred that night.

Rain Dampens Activities

Starting the following Monday, rain fell almost daily. By the end of the week James knew that replanting would be necessary. It was still too wet for machinery so replanting was being done by hand. A stroke of good luck then turned the tide for James. An improved variety of tomato developed by Campbell Soup Co., known as KC-146, became available and James pulled every plant in his original planting and set out only the KC-146 variety in his 2 acres.

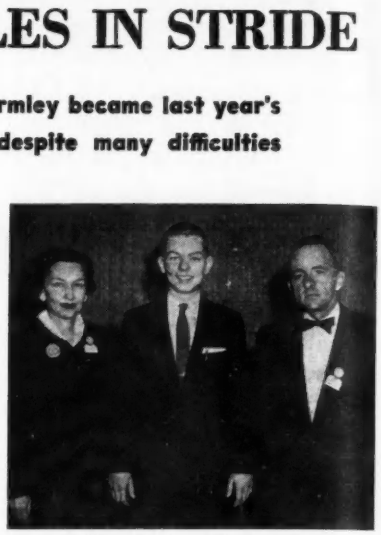
The plot was cultivated four times. James didn't risk a fifth cultivation for fear the plant roots would be cut and the vines broken. As an alternative he hand hoed twice.

The yield from the 2 acres totaled 90,733 pounds, or about 22.7 tons per acre. KC-146 is an earlier variety than Improved Garden State, the variety James had replaced, so tonnage was made by September 17, the date of last pick. Good grades were the rule, fruits were especially large, and fruit size was still satisfactory at the last picking.

Success Factors Listed

James attributes his success to a number of factors. The ground was never worked while it was wet. Ample nitrogen was assured through application and a history of livestock on the farm. Tied in with a good high-yielding variety, kept clean from weeds, these elements went to work for him when other conditions were right, culminating in success. A gross income of $1401.02 was realized from the 2 acres. Costs totaled $977.15, making James' net profit $423.87—a nice sum to add to his accumulating college fund.

"The NJVGA convention at Springfield," James says, "was cer-



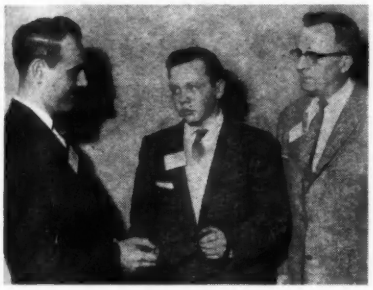
James T. Wormley (center), Oswego, Ill., national winner in Canning Crops Section of NJVGA Production and Marketing Contest for 1957, poses with his parents at 23rd annual convention of the NJVGA in Springfield, Ill.

NJVGA'S educational program to prepare young men and women for careers in horticulture is now in its 24th year. Copies of its program of projects and activities for 1958 are available from Grant B. Snyder, French Hall, University of Massachusetts, Amherst.

tainly the highlight of my very successful year." He was recognized again last fall by Illinois Canners Association. National Canners Association, sponsor of the Canning Crops project under NJVGA, welcomed James as a guest last month at their annual directors' meeting in Washington, D. C. At that time he enjoyed a 3-day whirlwind tour of the Capitol, the White House, the USDA, and Beltsville.

James already has his plans for this year well underway. On 16 acres, tomato variety trials will be run on about six to eight varieties, plus the traditional Improved Garden State variety. James also hopes to run maturity tests as well as production comparisons, and comparisons of grade samples for quality. He is one example among thousands demonstrating the value of the NJVGA program in preparing youth for a future in agriculture.

OHIO WINNER

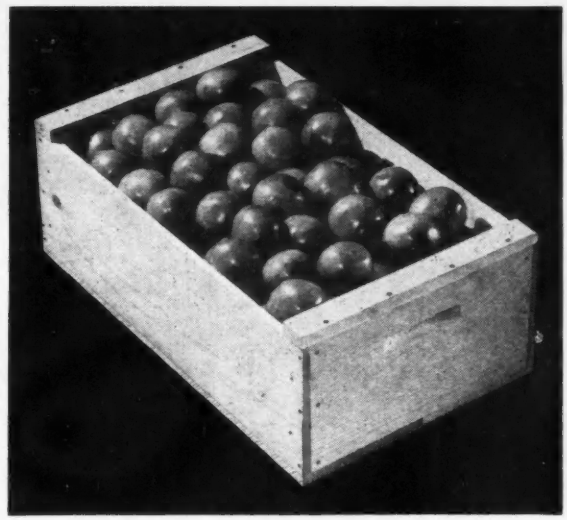


JAMES PARLETTE, Genoa, Ohio, state winner in the 1957 NJVGA Canning Crops Contest, is shown above receiving a $50 bond from Von Jones, Greenville, Ohio, chairman of the agricultural committee of Ohio Canners Association.

W. B. Wood (at right in photo), is director of Agricultural Extension Service, Ohio State University, which sponsors the youth project, along with NJVGA and National Canners Association.

Parlette won the award with his report on the production and handling practices he followed to produce 18.01 tons of tomatoes per acre on 3.91 acres.—*E. C. Wittmeyer, Ext. Hort., Ohio State U., Columbus.*

A bi-monthly page for the younger generation of vegetable growers and their national organization, the National Junior Vegetable Growers Association. For information write Grant B. Snyder, French Hall, University of Massachusetts, Amherst, Mass.



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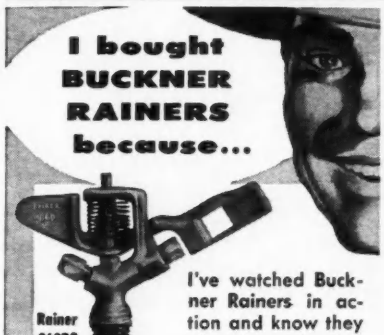


I've watched Buckner Rainers in action and know they give long-lasting dependable service. They are designed trouble-free to give years of rugged service under toughest field conditions.

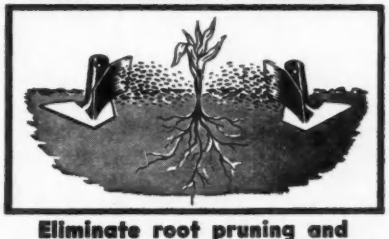
Besides, Buckner's GDG bearing was the original teflon washered bearing. Teflon and rubber washers absorb wear. You get continued even rotation, protection from water borne silt, and extra years of service. Buckner's Rainer is a great sprinkler.

Buckner originated the sealed sprinkler bearing. Buy Buckner Rainers from your sprinkler irrigation system dealer.

BUCKNER MFG. CO., INC.

P. O. Box 232 • Fresno (8), California

NEW LANTZ SWEEPS COVER WEEDS IN THE ROW



Eliminate root pruning and throw dirt where you want it

Ideal for both first and last cultivation. Patented sweep deflector on Lantz Row Sweeps throws dirt farther in a more uniform flow—even covers weeds and grass between hills in the rows. Faster cultivating speeds are possible because sweeps can be set farther from row—preventing root pruning. Fit all leading tractor cultivators. Adjust dirt control with simple twist of shank. Proven effective shallow cultivation for corn, soybeans and other row crops. Extra yield from one acre will more than pay for your Lantz Row Sweeps.

Send coupon for special field report folder.

LANTZ MAUFACTURING COMPANY, INC.
Dept. 116-E
Valparaiso, Indiana

Please send me special field report folder and other illustrated literature on the sensational new Lantz Row Sweeps.

Name.....

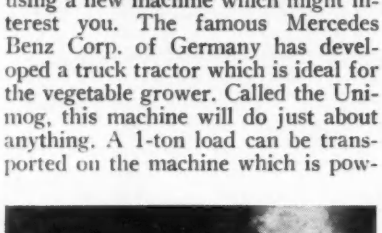
Town and State.....

My favorite Farm Implement Dealer is.....

New for You

German Truck Tractor

Vegetable growers in Germany are using a new machine which might interest you. The famous Mercedes Benz Corp. of Germany has developed a truck tractor which is ideal for the vegetable grower. Called the Unimog, this machine will do just about anything. A 1-ton load can be transported on the machine which is pow-

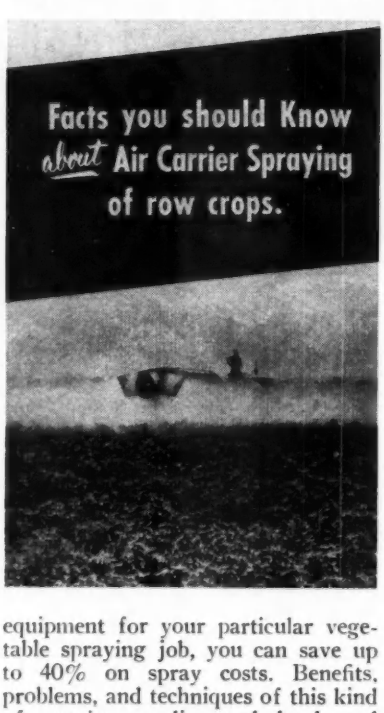


ered by a most efficient diesel engine. The Unimog is a 4-wheel drive machine with power takeoff. Pictured at top is a Unimog with a mounted pest control appliance. The sprayer is driven by the Unimog takeoff. The center picture shows how the Unimog

facilitates the planting of potatoes. It carries the seed pieces on its platform, thereby saving much time, as driving and planting can be done simultaneously. Note the Unimog with a front mounted multi-purpose implement in bottom photograph. Together with the steering, the driver also controls the implement. On even ground and on hills with an incline of up to 10 degrees, the work can be done by the driver alone. Versatility is built throughout the Unimog and, like all Mercedes Benz products, the machine is constructed of heavy steel to last many years. Diesel power makes it efficient and cheap to operate. Should you want more information, write Mr. Zane, Daimler-Benz AG, Stuttgart-Untertuerkheim, Germany.

Air Spraying

Why should vegetable growers use air-blast sprayer equipment? The answers are clearly outlined in the booklet pictured above. By using the right



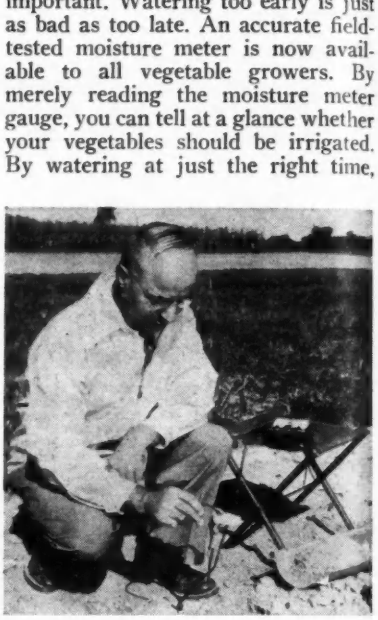
equipment for your particular vegetable spraying job, you can save up to 40% on spray costs. Benefits, problems, and techniques of this kind of spraying are discussed clearly and in a way all growers can understand. The booklet is free to our readers. All you need do is write Tim Colvin, Besler Corp., 4053 Harlan St., Emeryville, Oakland 8, Calif.

Accuracy Pays Off

One of the quickest ways to waste money and even reduce vegetable yields is to apply too much or too little fertilizer. Smart vegetable growers are finding it pays to know what elements their soil actually needs, and how much. The best, cheapest, most effective way is with an accurate soil tester. Every grower should own a soil testing set, and you can have one at low cost by simply writing Sudbury Laboratory, Box 1K, South Sudbury, Mass.

When to Water

The timing of irrigation is most important. Watering too early is just as bad as too late. An accurate field-tested moisture meter is now available to all vegetable growers. By merely reading the moisture meter gauge, you can tell at a glance whether your vegetables should be irrigated. By watering at just the right time,



you can save 30 to 40% on your irrigation costs. In short, the moisture meter makes it possible for vegetable growers to do a perfect job of irrigating. Pictured above is Dr. George Bouyoucos, the inventor of the device. You'll want more information on this important equipment . . . just write Bernard Dreskin, Industrial Instruments, 89 Commerce Rd., Cedar Grove, N.J.

Irrigation Pointers

I have just finished reading a very worthwhile booklet on sprinkler irrigation. Here are all the facts you need to know about irrigation. Cost of sprinkler irrigation, designing a system for your needs, and many more pertinent questions are answered simply in language we growers can all understand. The booklet will be given free to AVG readers . . . all you need to do to get your copy is write Henry Sanders, Shur-Rane Department, Food Machinery and Chemical Corp., John Bean Division, San Jose, Calif.

REAL ESTATE EROSION

(*Continued from page 9*)

wrapped cauliflower, there does not appear to be any definite trend.

In addition to "flower" the present line of crops includes lettuce, endive, cucumbers, bell peppers, cabbage, and broccoli. Market destination points of these crops may vary from local to as far south as New Orleans and north to Oregon, Washington, and Canada. Long distance shipments may go by truck or rail but all leave on an order or consigned basis.

In the field the growing of these seven crops is packed into 104 carefully managed and tightly scheduled acres. Such a packed growing program presents many difficulties in terms of rotation, irrigation, maintenance of high soil fertility, as well as insect, disease, and weed control.

Within the growing limits of the particular crops, attempts are made to maintain a planting-to-harvest timing that will tie in as closely as possible with the expected market demands; but even greater stress is placed on pointing all the field operations toward the production of top-quality merchandise.

While not forgetting the importance of yield, the question, "What will it do to the quality?" is always asked before any changes in field or packing operations are made. Being packers and shippers as well as growers, both men early recognized the importance of this quality factor in selling under tightening market conditions. Both also agree that it was probably this attention to harvesting and packing of high-quality produce that led to their cello packed cauliflower operation.

Trimmed to a point that is a housewife's delight, sealed in a shiny, sanitary, and transparent container, each head is the epitome of eye appeal on a grocery rack.

Extra Trimming Pays

Expensive? Higher labor costs? Yes, but here too the two partners are quick to point out the other side of the story; shipping costs are down because bulk and weight are sharply cut by the extra trimming. The same number of heads take up less than half the space of the conventional pack.

As a testimonial to this built-in customer eye appeal, the only period that T & L does not pack cauliflower is during the month of June and part of July. "We would then, too, if we could find a variety that would grow well," say the firm's two energetic pushers.

What about the "real estate erosion" mentioned earlier? Will it shut down T & L and other local farming

Increase Sales with baskets that give your produce

Eye-Catching Appearance
Instant Brand Identification
More Protection

Available in 2, 4, 8, 12 and 16 quart sizes.

Planned Packaging gives you produce baskets with fast, easy set-up, wood or wire handles, solid or ventilated sides. Shipped flat, they save storage space. Double-wall construction gives greater produce protection . . . ample stacking strength.

Attractive, 2-color design increases customer appeal . . . builds brand preference. Special private brand designs and colored board available at slight extra cost.

For free samples write to attention of Produce Sales Division.

Planned Packaging moves produce

The Ohio Boxboard Company
Rittman, Ohio

Containers
Cartons
Paperboard

PLANTS

The Ohio Boxboard Company, Rittman, Ohio
The Ohio Boxboard Co., Inc., Pittsburgh, Pa.
Western Containers, Inc., Lockport, N. Y.
Fairbanks Containers, Inc., Middletown, Ohio
Champion Containers, Inc., Plymouth, Michigan
The Ohio Boxboard Company, Cuyahoga Falls, O.
The Ohio Boxboard Company, Youngstown, Ohio

BEANS

CONTENDER and other leading market varieties still available.

SWEET CORN

GOLD CREST and GOLDEN SECURITY are sold out. We still have other leaders.

CUCUMBERS-MELONS

All varieties available as listed.

POLYETHYLENE MULCHING ROLLS

have proved their value in cutting labor, increasing yields. Ask for prices.

Send for complete seed catalog and our wholesale price list on Spray materials for Gardeners and Orchardists.

Letherman's

Dept. VG, Canton 2, Ohio

GIVE DRY WEATHER THE BIRD...

RAIN BIRD, of course!

There are handsome dividends to be earned in providing your own weather for crops and pasture . . . there's no better way to do this than with Rain Bird Sprinklers. Get water where you want it, when you want it!

Single installations have more than doubled—even tripled—yields and insured stability of crop income. *See your dealer.*

Write for free information.

NATIONAL RAIN BIRD SALES & ENGINEERING CORP.
Azusa, California
RAINY SPRINKLER SALES
609 West Lake Street, Peoria, Illinois

OPPORTUNITY ADS

Only 25c a word for one-time insertion; 20c a word for two-time insertion; 15c a word for four-time insertion—CASH WITH ORDER. Count each initial and whole number as one word. Copy must be in 15th of second month preceding date of issue. ADDRESS AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

BANTAMS

WHITE WYANDOTTE BANTAMS—HATCHing eggs, baby chicks, breeders, game birds, waterfowls, incubators $12.85. Circular. WILL SCHADT, Goshen, Indiana.

BOOKS

BERRY BOOK: "THIRTY YEARS OF BERries." Raspberries and strawberries. 84 pages, price $1.00 P'paid. ROY TURNER, 1525 S. Livingston St., Peoria, Ill.

THE HOW-TO BOOK ON STRAWBERRIES. The layman's primer, the professional's reference and everyone's factual guide to more and better strawberries. $1.50. AMERICAN VEGETABLE GROWER, Box 107, Willoughby, Ohio.

FREE WHOLESALE CATALOG. 100,000 Products. Tremendous discounts. ECON-O-MART, Whippany 24, New Jersey.

POTATO GROWERS—RECENTLY PUBlished 1958 American Potato Yearbook. Crammed with important facts. Send $2.00. Complete volume 1950-1958, $10.00. AMERICAN POTATO YEARBOOK, Box 540-A, Westfield, N.J.

TOMATO GROWERS—JUST PUBLISHED 1958 American Tomato Yearbook. Crammed with important facts. Send $2.00. Complete volume 1951-1958, $10.00. AMERICAN TOMATO YEARBOOK, Box 540-A, Westfield, New Jersey.

BUSINESS OPPORTUNITIES

FREE PICTURE FOLDER: "HOW TO make $3,000 Yearly, Sparetime, Raising Earthworms!" OAKHAVEN-25, Cedar Hill, Texas.

CASH FROM SAWDUST, TIN-CANS, NEWSpapers. Over 200 methods. Instructions $1.00. CHARLES COMPANY, 12-XNT, Norwood, Ohio.

600 ACRES FLORIDA GARDENING LAND in Martin County. South of the Frost Zone. 1 mile Canal Frontage—Suitable for Winter Crops: Corn, Beans, Tomatoes, Potatoes. $250.00 per acre with 29% down. Write JOHN NORTHRUP, Box 574, Stuart, Florida.

EARN CASH FROM STRAWBERRY SALES! Get our How-To Book on Strawberries that gives common sense treatment of the must and must-not in strawberry culture. Fully illustrated. $1.50. AMERICAN VEGETABLE GROWER, Box 107, Willoughby, Ohio.

100 ACRE PEACH ORCHARD IN HEART of the East Texas marketing area. Seven varieties. Modern home, packing shed, orchard equipment. Selling on account of health. Very good buy and priced to sell. More information on request. Box 864, Jacksonville, Texas.

WANTED

Sideline salesman now contacting Vegetable Growers, Nurseries, Florists, etc., to represent National Rubber Band Manufacturer. Attractive commission arrangement. Repeat business. Write Box 110, American Vegetable Grower giving territory covered, experience, etc.

ENLARGEMENTS

TWO BEAUTIFUL OILCOLOR 8 x 10 ENlargements from any photo or negative (returned) $1.00. PORTRAITCO, A780, Sweetwater, Texas.

FOR SALE—EQUIPMENT & SUPPLIES

SENSATIONAL GARDEN TRACTOR. HOES between plants and rows, including strawberries. Eliminates hand hoeing. Nothing else like this. Patent 2742840. Also tills. Fantastic offer to first few inquiries. AUTO HOE, DePere 8, Wisconsin.

HARDIE CONCENTRATE SPRAYER—REconditioned Nu-Way power pruner. LEO C. WEINGART, 2082 Braewick Drive, Akron, Ohio. Phone UN 4-5500.

SAVE up to 40% on—CHRYSLER INDUSTRIAL-IRRIGATION UNITS. Our own special irrigation unit costs only $1695.00, and includes CHRYSLER'S big 354 cubic inch V8 engine plus all the accessories to make it run. 6 cylinder units as low as $1395.00. Write for information. Dealer inquiries invited. Midwest Parts Corporation, Box 394, Gary, Indiana.

LARGE SIZE NIAGARA FRUIT AND VEGEtable grader with brush. Excellent for apples or tomatoes. GALLIA FRUIT GROWERS, Gene Plymale, Gallipolis, Ohio.

SEVERAL GOOD USED BLOWER TYPE Row Crop Power Sprayers that have been taken in trade by our dealers on Myers new Row Crop Concentrate Sprayers. Your inquiries would be welcomed by us. WATER SUPPLIES, INC., Ashland, Ohio. Phone: 21565.

WOOD LETTERS FOR ATTRACTIVE signs. Inexpensive. Permanent. NORTHLAND PRODUCTS, Route 1282-T, Rockland, Maine.

New and remanufactured INTERNATIONAL HARVESTER ENGINES and POWER UNITS. Special spring clearance sale. Midwest Industrial Company, 835 No. Capitol, Indianapolis, Indiana.

INVENTIONS WANTED

ARE YOU INTERESTED IN OFFERS FROM reliabel manufacturers for your invention? Patented, unpatented. HARVEY ASSOCIATES, Dept. 8A, Cambridge, Maryland.

MISCELLANEOUS

FOURMONE COMPOST ACTIVATOR TURNS garden wastes, manures, sawdust, etc., into compost. Easy and safe to use. 3 oz. trial can $1.00 (treats approximately 6 tons garden wastes) ¼ lb. $2.25, 1 lb. $3.95 postpaid. Lower prices for quantities. Free literature from FOREIGN PRODUCTS CORP., 21 Washington St., West Orange, N.J.

GUMMED LABELS—WHAT SORT? NICE samples free. FRED HOFFMAN, Rt. 7, Port Huron, Mich.

OF INTEREST TO WOMEN

QUILTING? REMNANTS? SILKS, COTtons, velvets, nylon, 25c yard. Postpaid RAINBOW, Estill Springs 10, Tenn.

SEND US RAW WOOL FOR BLANKETS. Details free. WEST TEXAS WOOLEN MILLS, 439 Main, Eldorado, Texas.

LEARN PROFESSIONAL CAKE DECORATing. Details free. DECO-SECRETS, Venice 33, Calif.

PLANTS & SEEDS

BURPEE'S "BIG BOY" F-1 HYBRID TOmato plants. Live delivery guaranteed. 12—$1.25; 50—$3.75. Postpaid. FRANCIS W. PETRIE, 411 South Ravenel, Columbia, South Carolina.

STRAWBERRY GRADERS. WON'T BRUISE strawberries. Save $30.00 a day on labor. $28.00. Postpaid. Write for literature. SUTTON'S GRADER CO., Mackville, Ky.

ASPARAGUS MARY WASHINGTON, 1 & 2 year roots. FELIX MICKEVICH, Scottaville, Michigan.

NEW HYBRID DAYLILIES BLOOM 24-48 hours. Seeds, 20 for $1.00. PHILIP O. BUCH, 104 Rockaway Ave., Rockaway, New Jersey.

WANTED—EQUIPMENT & SUPPLIES

WANTED: USED ONE ROW MECHANICAL potato digger in good condition. VAUGHN HEMPFLING, Hebron, Kentucky.

OPPORTUNITY ADS

BUY, SELL AND TRADE—Readers and business firms will get top advertising value at low cost from AMERICAN VEGETABLE GROWER "Opportunity Ads." RATES—25c per word for one insertion; 20c per word per month for two insertions; 15c per word per month for four insertions or more. Count each initial or whole number as one word. CASH WITH ORDER.

AMERICAN VEGETABLE GROWER reserves the right to reject or alter any copy which does not merit its standards.

Are You a Seed Salesman?

Add to your income by selling AMERICAN VEGETABLE GROWER. Write today for our liberal nursery agents' plan. Address:

EDWARD MEISTER, Circulation Manager

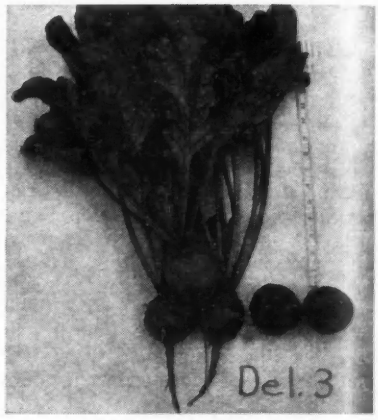
AMERICAN VEGETABLE GROWER

WILLOUGHBY, OHIO

operations? Despite such progressive farming efforts as mentioned here, in time it may.

Since 1942 some 56,000 acres in Santa Clara County have gone to nonfarm uses. A large part of this was farmed or farmable land, yet strangely, the vegetable acreage (25,000 acres annually) has remained quite stable. At the present rate and manner of urban and industrial growth it cannot be expected to remain so. However, even if nothing more is done to stabilize and protect the agricultural areas, production will continue for 10 or possibly 15 years. In that length of time the national agricultural situation may be one of crop deficits rather than surpluses.

The seriousness of this California farm problem was well summarized by Dr. E. H. Engelbert, University of California at Los Angeles, in his closing remarks at the 1956 statewide conference on agricultural zoning: "Whether California citizens are



OUTSTANDING PROCESSING BEET

Deepest Red could be regarded as nation's best processing beet. A cross between an unnamed beet and Perfected Detroit, the new variety was developed by Prof. Eugene P. Brasher, University of Delaware, Newark. In overall ratings, performance was best among eight top commercial varieties tested. Color, sugar content, and texture are particularly outstanding. It has low fiber content; flavor is among the best. The new beet has no "zoning" rings. Seed will not be commercially available until 1960 planting season.

now sufficiently educated and willing to institute a wise program for protecting the land resources of the state is questionable. But we do know that 30 years hence when our population has grown to 25 million and our economic capacity has doubled, the public will rue the day some actiton was not taken."

Locally efforts by farmers and farm groups are being made to control or channel this "real estate erosion" problem. As T & L's Armond Torrello has said, "Along with our neighbors, we'll do what we can; in this, we realize we're bowling in a pretty big league. If we strike out, let's hope we are playing a bowling game and not baseball." THE END.

POTA

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POTATOES

HOUSEWIVES APPROVE

QUALITY potatoes packaged in transparent film not only have more consumer appeal than potatoes bagged in paper but they also retain their good qualities longer.

In a co-operative test conducted by the USDA, polyethylene manufacturers, and chain stores, California Long White Rose potatoes packaged in both paper mesh window bags and 10-pound poly bags were shipped cross country from California to New York City.

Results of the experiment overwhelmingly favored the poly package. Weight loss in transit of the poly-bagged potatoes was only 10% of the weight loss in potatoes in the paper containers, and less than half in potatoes that were stored until sold.

The poly-bagged potatoes were firmer and peeled better. Paper-bagged potatoes, after being in the store for awhile, were more shriveled and spongy to the touch.

Because of dehydration, potatoes in the paper bags became severely discolored; no discoloration was noted in the poly-bagged potatoes.

No flavor difference was reported. However, housewives preferred the potatoes in poly bags because they were firmer and easier to peel.

TOO MUCH ACREAGE!

A REDUCTION in potato acreage for late summer and fall harvest has been urged by Secretary Benson in order that marketing and price difficulties can be avoided next fall and winter.

The 1958 intentions-to-plant report issued March 18 indicated that growers in certain key states are proposing to plant an acreage considerably in excess of the USDA's acreage-marketing guides which were issued in February. USDA recommended a late summer-fall planting of 994,000 acres. Growers have indicated 1,078,000 acres will be grown.

The states and areas in which the intended acreage is indicated to be substantially in excess of the acreage marketing guides include Maine, New Hampshire, Rhode Island, and North Dakota in the Midwest; and all of the western states except Montana.

HANDBOOK FOR 1958

POTATO machinery and equipment feature the 1958 *Potato Handbook*, published by Potato Association of America, 4121 Mineral Point Road, Madison, Wis. Subjects covered include operating suggestions for harvesters, seed cutting and handling, box types, box handling, and storage of potatoes. Single copies are available for $2.00 from association.

'WHY I WILL ATTEND

VGAA'S GOLDEN ANNIVERSARY CELEBRATION

IN CLEVELAND, OHIO, DECEMBER 8-11'

"I FEEL sure that it wouldn't have been possible for me to continue farming successfully without the practical 'know-how' that has been furnished so generously at the convention of Vegetable Growers Association of America.

"I've been a member since I attended its convention at Philadelphia in 1929. Since then, I've attended most of these conventions.

"I've obtained priceless information on such vital things as chemical weed control, latest insecticides, importance of and best cover crops, most efficient use of fertilizers, latest machinery and irrigation equipment, improved varieties and cultural methods, packing and marketing, economic trends indicating best crops to grow, and, most of all, new inspiration and incentive from association with fellow growers.

"When I first started farming in 1916, I realized that my limiting factor was 'know-how'—and it still is. Here's a quote from another fellow who felt as I do: 'Agriculture is an art which will enrich those who practice it, provided they understand it; but if they do not understand it, no matter how hard they labor at it, it leaves them in poverty.' So wrote Xenophon, Athenian historian and general, 400 B.C.

"Here's a quote by Diocletian, Roman emperor, 300 A.D.: 'Were you to come to Salona and see the vegetables I raise in my garden with my hands, you would no longer try to get me to become Emperor again.'

"Thanks to the 'know-how' acquired through my contacts with VGAA (and some hard work), I increased my holdings from 30 acres in 1916 to 350 acres today, 10 miles from Atlanta, with 150 acres irrigated. I have refrigerated rooms holding 3 carloads, a flake ice machine which makes a ton of ice a day, and every piece of modern machinery I feel that I can use efficiently. I also own 700 acres on the river 20 miles from Atlanta. I have no mortgages or debts.

"I am 65 years old and as active as ever. I had one of my best years in 1957, and I am enlarging my packing shed. I love to farm, and the miracle of all growing things still fills me with wonder and pleasure."—*R. F. Sams, Sams' Truck Farm, Clarkston, Ga.*

FREE Booklet

What You Should Know About Air Carrier Spraying of Row Crops

plus information on how you can save up to $2,000.00 on an air carrier sprayer with the Besler Power Package.

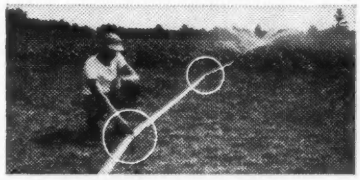
Besler Corp. 4053 Harlan St.
Emeryville, Calif.

VEGETABLE PLANTS
VIRGINIA STATE INSPECTED tomato plants—grown from Premium CERTIFIED seed. Cabbage, Cauliflower, Broccoli, Sweet Potato, Pepper.
QUALITY COSTS NO MORE
Write or telephone for catalogue and prices.
J. P. COUNCILL CO.
Logan 23546—Franklin, Va.
"Virginia's Oldest and Largest Growers"

ZON SCARECROW

Positive protection. Uses carbide or acetylene. No pilot. Retails $59.50. (Dealerships available)
B. M. LAWRENCE & CO.
244 California St., San Francisco

McDOWELL COUPLINGS MAKE IRRIGATION *More Profitable— More Economical*



The simplest, fastest way to join irrigation pipe!

With McDowell—*the quality couplings and fittings*, there are no hooks or latches to cause extra work and costly maintenance. Water pressure provides a tight seal automatically. You can set-up, take down and move a McDowell Coupling System faster and easier. And rugged McDowell Couplings work better, last longer, need less care.

MAIL COUPON TODAY

Please send literature, details on McDowell Coupling Irrigation.

Name_____

Address_____

_____

McDOWELL MANUFACTURING CO.
Pittsburgh 9, Pa.

Who's the Boss?

THE current trend toward integration in American agriculture makes the above question especially significant. Dr. W. E. Black, of Orlando, Fla., currently general manager of Florida Tomato Committee and long active in experiment station work in Florida, discusses this trend in a recent article in *The Packer*, and points to the tools of marketing agreements and co-operative action by producers as means of the latter maintaining their "independence." Excerpts from his article which follow, contain much food for thought:

Back when I was a boy, the Black's bossed the farm. This was so because we bought and sold so little that no one else wanted to boss it.

We didn't buy much because we saved our own seed. After each harvest the corn, grain, vegetable seeds, grass seeds for next year's planting were moved to the second floor of the house. The stuff for feeding stayed in the crib and granery. Fertilizer we didn't buy partly because we didn't have the money, and partly because we were satisfied with what the "Good Lord" gave us. Spraying and dusting (except for arsenic for potato bugs) was unheard of.

We worked our own fields and exchanged with the neighbors for the really big jobs like thrashing.

The buyers didn't even know we were farming. The small town folk who worked on railroads, in the mines, or storekeepers bought all we had to sell.

Today it's different. We want more than what the "Good Lord" will give us. We have to have fancier seeds, lots of fertilizer to grow big crops to fetch bugs and such things. Now we need to spray, dust and cuss. We just have to farm bigger than ever.

Why? To catch the buyer's eyes. He wants big things. We've got to be somebody to be seen.

This buyer, of which there are less and less because of chain stores, is really big. With one nod of the head he can buy all the stuff from a bunch of farmers.

What is really happening is that lots of farmers are farming bigger than their breeches. Farming with the other fellow's money. The vegetable man wants fertilizer, spray stuff, boxes, new machinery—all in advance.

Now the thing that is happening is what you would expect. If you advance money what do you ask? You'd expect to get your money back. With so many things bought in advance there isn't enough left to make every advance "safe," especially if something should go "haywire." So the man putting up the stuff in advance says he'll be the boss. And if you're going to farm big you let him. You end up living on the farm, doing as he says, waiting for pay.

You, Mr. Farmer, are forcing the businessman into farming. You are making him "integrate" the farmers. As he moves in he looks after all the steps from supplying the seed, or the chicks, to selling to the consumer. This makes many farmers unhappy, so they ask the government for help. They knock on lawmakers' doors.

Farmers created the conditions that drive them to Washington. It is too much to expect those people who do not farm to correct all the faults out on the farm. Furthermore, there are so many things wrong, or that can go wrong, that no one new law can correct it all. And the city folk are not going to look out for the farmers without a price. They may even want a bigger price than is being asked by the supplier, processor, or the buyer.

What is the answer? Who is going to be the boss?

Nearly everyone would like to see the farmer the boss. But he is going to have to change his ways.

First, farmers must team up with farmers. This means he must get off his high horse, and not be so high and mighty. He will have to confer with other farmers, in an organized fashion, and do what is best for all, rather than one. He is going to have to surrender some of his decision-making to a group.

But it isn't enough to be a part of a team. The team has got to have authority and purpose. In some instances this might take the form of large bargaining associations, which bargain for a price and other terms of sale. Such associations would not handle the product. They have the advantage of mustering the farmers' withholding power at a low operating cost. This is okay if the farmers' second choice of farming is about as profitable.

Or it could take the form of a large selling co-operative. Here the co-operative could either handle the crop and make sales, or merely direct the sales after certain rules are agreed upon. This has the advantage of being able to sell big, just as the buyer deals big. And as more and more of the stuff goes through the co-op, each farmer's selling power is increased. But the slip-shod farmer won't like this kind of co-operative, because his stuff is usually so poor that the co-op salesman cannot sell it. The salesman can get good money only for good stuff.

The selling co-operative is more costly at the start than the bargaining association. In each instance, top price needs to be paid for management.

What about the farmers that won't set up their own selling or bargaining association? What can they do? They can still be the boss if selling is done according to rules under marketing agreements. This can be based on either federal or state law. Under these agreements they don't have to hire lots of people, or put up any money. Everyone is given an opportunity to vote. When enough vote "yes," the terms of the agreement apply to everyone. With marketing orders the farmer can plant what or how much he likes, but he can sell only part, the better part of what he grows. Whatever any one farmer leaves at home is left home by everyone. If someone sells crops below the agreed upon quality level, he is subject to fine in court.

This program puts only the better stuff on the market. It limits the supply, making it easier to sell or buy. Generally the poorest stuff that the farmer grows brings the farmer nothing and may even make his income smaller. By keeping the poor stuff off the market, the good stuff flows faster, at a better price, to the consumer.

Under milk orders (70 federal, some state) the price is set, but the amount of milk is not regulated. Under fruit and vegetable orders (35 federal, more state) the quality is regulated, but the price is not set.

This is your choice if you want to be the boss. You might also consider supporting your general farm organization, especially if it is prepared to help you commodity by commodity.

If you have a strong bargaining or selling association, or a workable marketing order, you might even consider advertising and promoting your product. This helps. But clean up what you are going to sell first. Advertise only after you are proud of what you are selling.

Is all this a big price to pay? To stay in farming? Yes. To be the boss? No!

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—Abraham Cowley

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